ACL Swaps Old Offices For New

August 8, 1960

RAILWAY AGE *weekly*

RATE DEBATE:

Emphasize Costs?

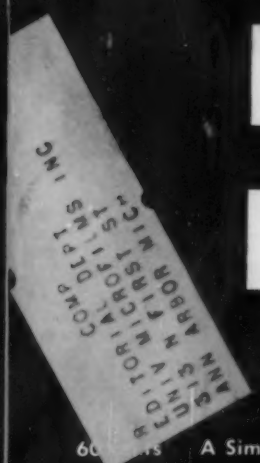
page 15

or

Value of Service?

page 34

How To Plan For Microwave



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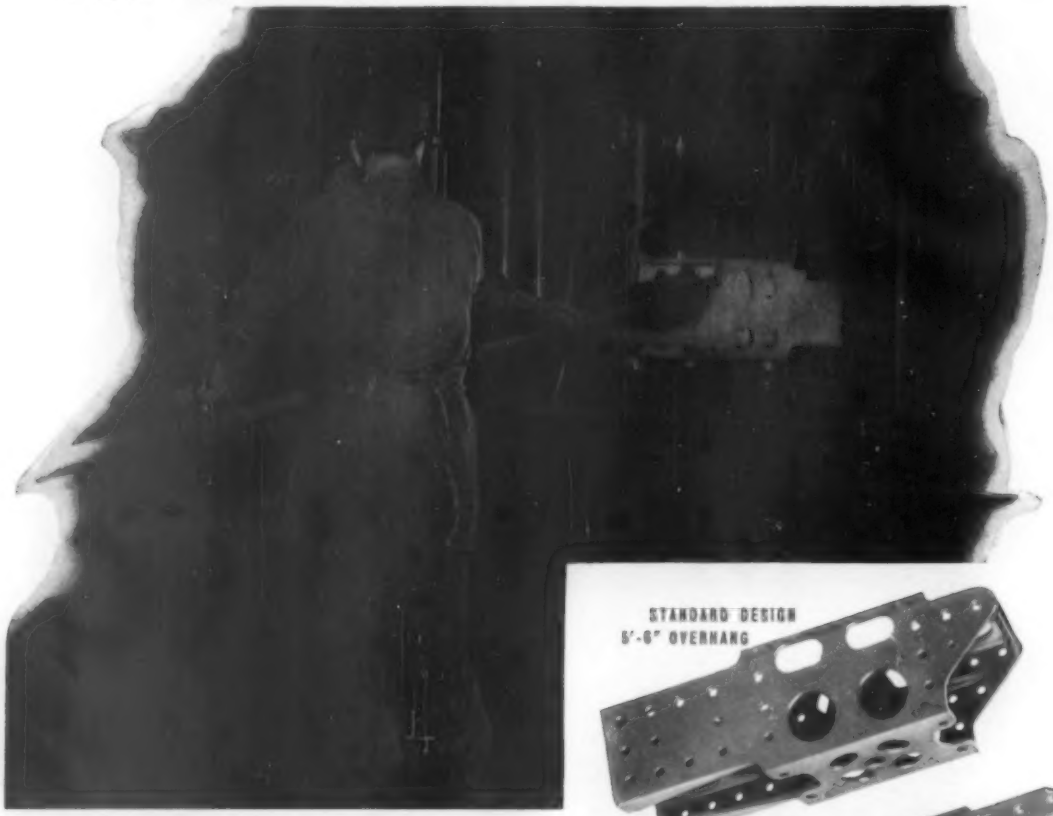

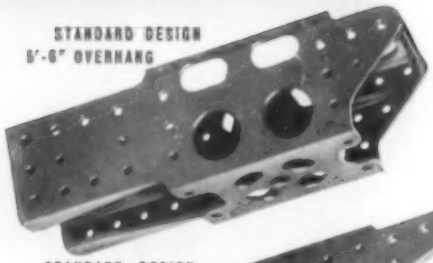

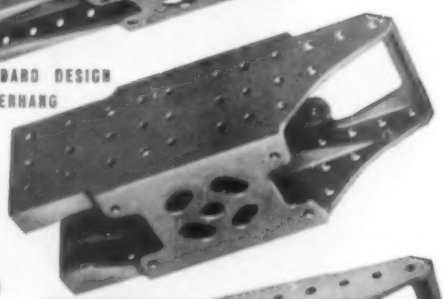

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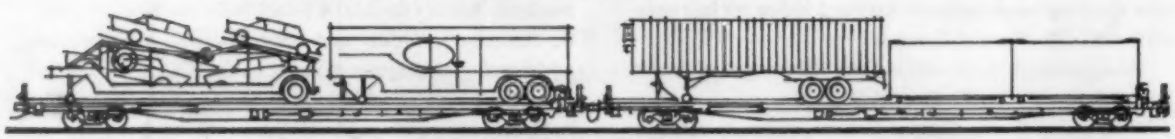

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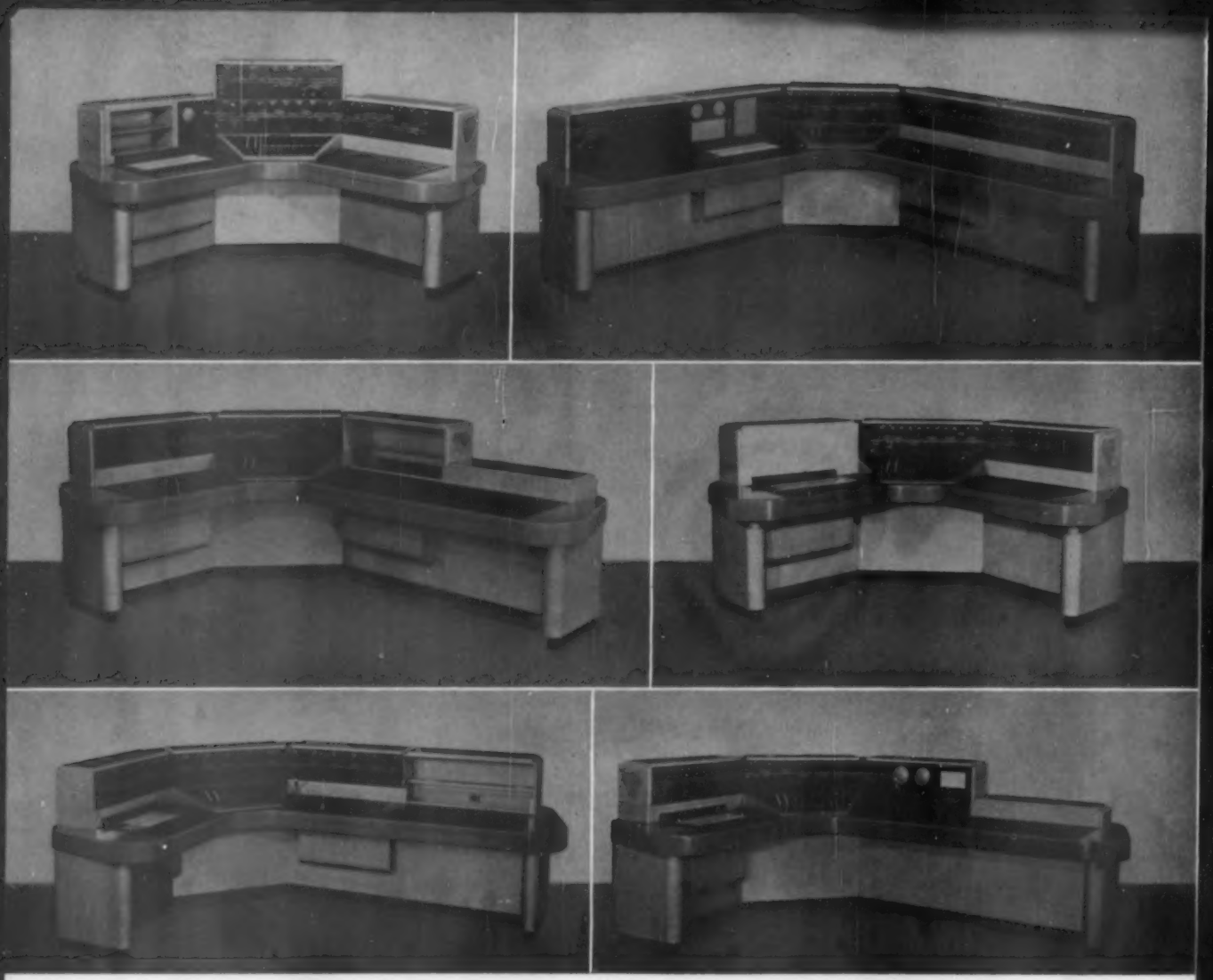

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RAILWAY AGE *weekly* August 8, 1960 • Vol. 149, No. 6

Week at a Glance

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High court may get NRAB case ..... p. 9

The Railway Labor Act provision relating to enforcement of Adjustment Board awards is headed for a court test that could have far-reaching effects. The case arose out of Rio Grande's refusal to pay two awards which it holds to be "clearly erroneous."

30,000 Scouts choose the railroads p.14

It took 68 special and 28 regular trains to move Boy Scouts to and from their Fifth National Jamboree at Colorado Springs, Colo. A full year's planning by a special transportation group insured a smooth operation.

Cover Story—ACL moves into new home p.16

It's nearly 500 miles from Wilmington, N. C., Coast Line's old home city, to Jacksonville, Fla., the railroad's new headquarters. But careful planning enabled ACL to move its offices and 950 Coast Line families with a minimum of confusion, and no interruption in normal operations.

Cover Story—How to plan for microwave p.19

Railroads display an increasing interest in microwave systems of communication. Such systems—and the factors

RATE DEBATE

Should costs control rates? p.15

Alan White, of the Railway Express Agency, proposes a simplified basis of maximum rates to replace the entire complex class rate structure. Under his plan, says Mr. White, making class rates would become an exercise for the cost accountant. Also, he adds, the commodity ratemaker would come into his own as an expert assayer of the transportation economics of individual commodities.

'Value' rates are still valid p.34

Some reservations about Mr. White's proposal are expressed on this week's Action Page. For example, Mr. White would substitute for class rates a structure based on so-called fully distributed costs. Such costs, however, have the fatal quality of rising when traffic volume falls, which could price railroads out of business. "Value of service" considerations could and should be given some weight in fixing rates.

Piggyback trailer with underframe of USS High-Strength COR-TEN Steel fabricated by A. O. Smith Corporation. The trailer was built for the Wabash Railroad.

It takes a stiff backbone to ride piggyback

Piggyback trailers must take rough handling and abnormal loading—and while they need to be light for maximum payload, the frame must be extra strong to prevent damage.

To solve this problem, USS COR-TEN High-Strength, Low-Alloy Steel is used for the two 40′ long underframe side rails of these piggyback trailers. The steel was fabricated by the A. O. Smith Corporation, Milwaukee. USS COR-TEN Steel has been used for trailer frames ever since it came out in the early 1930's. It's the best steel on the market for this type of application, especially where you are shooting for low maintenance costs and minimum repair demands. These are made possible because of COR-TEN's high resistance to atmospheric corrosion and additional strength. USS COR-TEN offers a minimum yield point of 50,000 psi compared to 33,000 psi for the steel previously used.

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USS

Week at a Glance cont

Current Statistics

Operating revenues	
5 mos., 1960 ...	$4,064,090,155
5 mos., 1959 ...	4,125,693,993
Operating expenses	
5 mos., 1960 ...	3,195,545,311
5 mos., 1959 ...	3,229,846,918
Taxes	
5 mos., 1960 ...	450,170,907
5 mos., 1959 ...	438,663,308
Net railway operating income	
5 mos., 1960 ...	273,263,468
5 mos., 1959 ...	324,315,344
Net income estimated	
5 mos., 1960 ...	195,000,000
5 mos., 1959 ...	234,000,000
Carloadings revenue freight	
29 wks., 1960 ..	17,372,946
29 wks., 1959 ..	17,942,169
Freight cars on order	
July 1, 1960 ..	29,555
July 1, 1959 ..	40,973
Freight cars delivered	
6 mos., 1960 ...	31,402
6 mos., 1959 ...	18,272

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which must be weighed when planning to install them—were the subject of a committee report at the recent meeting of the AAR's Communications Section.

Western mergers move closer p.29

ICC examiners' hearings last week developed little or no opposition to two proposed consolidations—C&NW's acquisition of M&StL, and the Soo Line-Wisconsin Central-DSS&A merger. Elsewhere on the merger front, both the NYC and the C&O have sent representatives to Switzerland to woo the support of Swiss interests holding stock of the B&O, which both carriers are seeking to acquire; and in the South, four railroads have indicated they will oppose the ACL-SAL merger.

Short and Significant

Next move is up to the unions . . .

in the exchange of notes on the work rules dispute. Chiefs of the five operating organizations are scheduled to meet in Cleveland early this week. They're expected then to reply —negatively—to the latest carrier proposal for handling the fireman-off issue separately from the other work rules disputes.

New York Central has agreed to pay $1,700,000 . . .

for C&NW's 20% interest in Indiana Harbor Belt. North Western will retain trackage rights in the Chicago switching road which will now be owned jointly by New York Central (80%) and Milwaukee (20%).

Truckers have created a 'task force' . . .

to study the effects of "rampant piggyback operations" on "regulated transportation, shipping interests and the American consumer." The study was authorized by the Regular Common Carrier Conference of American Trucking Associations.

Piggyback has come to the Seaboard's rescue . . .

in retaining a Post Office contract for the movement of empty mail sacks (about 25,000 a week) between Florida and cities in the East. Empty sacks, which formerly moved in express cars under a mail rate, now move TOFC under a lower freight rate. Post Office no longer has to do its own collecting and loading, unloading and distributing. Total saving to taxpayers: $30,000 a year. To achieve this saving, Post Office had planned to shift traffic to a steamship line, but is pleased with the piggyback arrangement, will stick with the Seaboard.

How to *reduce* wheel costs

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High Court May Get NRAB Case

► **The Story at a Glance: The U. S. Supreme Court may be called upon to decide if a union may strike over a carrier's refusal to apply an award of the National Railroad Adjustment Board. The Brotherhood of Railroad Trainmen contends a walkout is legal. Rio Grande, the railroad involved in two current cases, contends with equal vigor that the union must take its claim to U. S. District Court.**

The dispute involves two awards of the NRAB First Division with referee which could cost an estimated $500,000 to $750,000. Rio Grande, charging the awards are "clearly erroneous," has refused to pay unless ordered to by a federal court. When the BRT struck to enforce demands for payment, the carrier obtained a temporary restraining order, since made permanent. Now the BRT is planning an appeal which could eventually bring the case to the Supreme Court.

Another previously untested provision of the Railway Labor Act—the section relating to enforcement of Adjustment Board awards—is headed for a court review which could have a significant effect on the position of both management and the unions under the Act. (The Supreme Court now has under consideration a dispute involving the union shop provisions of the Act—the so-called Looper case, in which the organizations are appealing from a Georgia Supreme Court decision barring use of union dues, fees and assessments for purposes other than collective bargaining.)

Rio Grande's refusal to apply two awards by the NRAB has already brought the warning from Guy L. Brown, recently retired grand chief of the BLE, that "if the position of this carrier is upheld, it means that we must take our cases to the First Division—we cannot use economic strength. If we lose, the dispute is closed. If we win, the carrier seemingly can force us to court where it will be necessary to try the case over. The court is not bound by the Adjustment Board."

Rio Grande, however, stands firmly behind its position that the awards are "clearly erroneous." Further, the carrier contends, if the union wants to press for enforcement of the awards, its proper avenue is through the courts and not through the exercise of economic strength.

W. P. Kennedy, BRT president, said the organization will "definitely pursue the case to the limit." All brotherhoods, he noted, are "equally interested" in the outcome.

Another top BRT officer said the organizations would be "faced with a very serious situation" in the event the carrier's position prevails in the upcoming court fight. He's looking for the present case to go to a Supreme Court decision—and, if the carrier is upheld and the union is forced to file civil suit in District Court, that case, too, would probably go to the Supreme Court.

The Trainmen's officer said that "about 95% or more of all grievances and claims [going before the NRAB] involve money awards" and the D&RGW case "is the first to my knowledge where the carrier has taken this position."

The effect, he charged, is to give the railroad two courts while restricting the petitioner to one, the Adjustment Board.

At issue is the language of Section 3 (p), which provides that if a carrier does not comply with an NRAB award, the petitioner "may file in the District Court of the United States . . . a petition setting forth briefly the causes for which he claims relief, and the order of the division of the Adjustment Board in the premises." The findings and order of the NRAB division "shall be prima facie evidence of the facts therein stated," and the district courts are empowered "to make such order and enter such judgment . . . as may be appropriate to enforce or set aside the order of the division of the Adjustment Board."

The BRT position has been that court action is permissive, but that a strike is equally legal.

Union attorneys are now expected to prepare an appeal from the ruling by U. S. District Judge Hartfield Chilson which permanently enjoined the BRT from striking to enforce its demands. When an appeal is made, it will go before the U. S. Court of Appeals, Tenth Circuit.

The disputed awards are Nos. 19372 and 19389, issued Dec. 17, 1959, and Jan. 20, 1960, by the First Division with Referee John F. Sembower. Carrier members filed a dissent to the second award, which dealt with claims by conductors and brakemen for extra pay because head brakemen were required to herd engines from inbound trains to a tie-up track at North Yard, Denver.

In the first case, 19372, trainmen claimed extra pay on a charge that a local train assignment in Utah was changed and improperly bulletined. Rio Grande countered, pointing out that a contract provision gave the company the right to establish new runs or new assignments and that the change had been correctly bulletined. But the referee sustained the claims.

In the North Yard case, Rio Grande charged that the point at issue had already been decided, by a special board of adjustment which ruled against the claimants. If the claims were to be upheld by the First Division, the road contended, "carrier would be penalized even though it was in compliance

'No Weakening'

There has been, and there will be, no let-up in efforts to modernize the rail rate structure.

That's the preliminary consensus among chief traffic officers of more than a score of major railroads queried by Railway Age.

The survey was undertaken because newspaper reports of the need to raise freight revenues in the wake of recent wage increases appear to have created in some quarters the impression that railroads are weakening in their drive to make individual rates more competitive or to establish new types of competitive rates. Railway Age doubted the accuracy of any such conclusion, and its doubts are fully supported by replies so far received.

As G. R. Glover, traffic vice president, Burlington, says in a statement that seems to speak for all: "There will be no weakening of the program to modernize freight rates and make reductions where such action promises to add to the net revenues of the carriers."

with an award of an authorized tribunal and was operating in accordance with such award." Nevertheless, the division with referee sustained the claims.

Dissenting carrier members of the division declared that "this claim should have been dismissed. In failing to do so, this referee committed a grievous error. Furthermore, in sustaining this claim, on its merits, equally serious errors are clearly apparent." The applicable article of the agreement, the dissenters said, provided that "trainmen in local or through and irregular pool freight service required to do terminal switching before departure or after arrival at terminals, will be paid for the actual time so used at pro rata rates on the minute basis." The rule, they declared, "does not support the claim for an additional day's pay."

Both cases grew out of disputes that developed eight years ago.

ARSA Exhibits to Cover Two 1961 Conventions

The Allied Railway Supply Association has announced plans for five full days of exhibits during the September 1961 meetings of the Coordinated Mechanical Associations and the Purchases and Stores Division, AAR, in Chicago.

Exhibits will be open Sept. 10 through Sept. 14, 1961. The Coordinated group—consisting of the Air Brake, Car Department, Locomotive Maintenance Officers, and Railway Fuel and Operating Officers Association—is meeting Sept. 11, 12 and 13 at the Hotel Sherman. Changing its meeting time from the usual June dates, the P & S Division will meet Sept. 13, 14 and 15 at the Hilton Hotel.

As in 1959, the ARSA is sponsoring in 1961 both exhibits at the Hotel Sherman and a track exhibit. However, the track exhibit will be in a different location—at the Illinois Central's 31st Street yards where 5,000 feet of track space will be available. Free bus transportation will be provided between the Sherman, Hilton and the yards on a regular schedule during the conventions.

Watching Washington *with Walter Taft*

Mr. Taft is on vacation. During his absence, this column is being written by other members of the staff.

• **REPEAL OF SECTION 4** of the Interstate Commerce Act has been urged by the AAR in a statement filed with the Senate Transportation Study Group. The AAR contends that Section 4 "is long since out-dated" and causes "much unnecessary regulatory rigmarole which is expensive and not in the public interest."

A PRIMARY PURPOSE of the section (preventing the charging of higher rates to intermediate points than for a through haul and prohibiting for through transportation rates any higher than the aggregate of intermediate points), said the AAR, "is already served by other provisions of the Act outlawing every conceivable type of discriminatory rate practice. . . . The other purpose for which Section 4 has been used, that of protecting water carriers from destructive competitive practices, is likewise served by other provisions of the Act."

RAILROADS are not seeking an opportunity to treat shippers differently without justification, argued the AAR. On the contrary, they only want discriminatory rate practices to be reviewed realistically in the light of the fact that most shippers have access to competitive forms of unregulated transportation.

PRINCIPAL REASON why the railroads want Section 4 repealed, the Association said, is that, as interpreted by the ICC, it is used to protect water carriers from legitimate competition. "Theme song" of the water carriers, the AAR said, has been that railroads, unless forced to keep their rates differentially higher, would be guilty of "unfair or destructive competitive practices." In proceedings under Section 4, the AAR argued, "they have been able to win wide acceptance of this position."

• **A COMPREHENSIVE STUDY** aimed toward expanding trade and commerce through the St. Lawrence Seaway has been urged by Sen. Alexander Wiley of Wisconsin. Senator Wiley has written the Secretary of Commerce: "I am particularly concerned with assuring that (a) the Seaway fulfills its full potential in terms of market opportunity for Wisconsin, and the great agricultural-industrial complex of the upper Midwest; and (b) that it pays off the costs of operation and construction—a $140 million investment by the American people."

• **ICC IS CONSIDERING** amendment of the accounting regulations (49 CFR Part 10) applicable to railroads, cancelling the texts of operating-revenue accounts 134, Parcel Room, and 136, Storage-Baggage. Operating-revenue account 143, Miscellaneous, would, at the same time, be amplifed to provide that revenue from parcel rooms and storage of baggage be included.

ICC FEELS that the advent of automatic coin lockers in stations has reduced parcel-room and baggage-storage revenue to an insignificant amount in relation to the gross revenues of carriers. Therefore, it is proposed to cancel the two separate accounts and include them in the general revenue account now provided for incidental transportation revenues.

• **AN AAR PROPOSAL** to create a national user charge commission to establish and collect tolls for inland waterways, airways and federally-assisted highways and airports has come under fire from American Waterways Operators, Inc. The AAR proposal, Rear Adm. Edmond J. Moran, USNR (ret.), told the Senate Transportation Study Group, "represents the most extreme and destructive form of the user charge doctrine, and if carried out would result in the virtual extinction of inland waterway transportation."

What Should Stenciling Show?

To the Question and Answer Editor:

Why is there an apparent lack of uniformity in the stenciling of the "Load Limit" and the "Nominal Capacity" on freight cars?

For example, your issue of May 30, page 16, illustrates a new type Southern lumber car. I selected this only as a convenient example. You will note that the capacity is shown as 140,000 lb and the load limit as 135,000 lb. I believe that indicating the nominal capacity in excess of the load limit is contrary to AAR Interchange Rule 30(5) (7). See 1960 Interchange Rule Book, page 133.

I contend that this car should indicate a nominal capacity of 135,000 lb and a load limit of 135,000. The maximum allowable rail load for 6-in. by 11-in. journals is 210,000 lb. Subtracting the light weight of the car which has been rounded off to 75,000 lb, you obtain 135,000 lb. This then is the load limit. Since the rules are quite clear in prohibiting the nominal capacity from exceeding the load limit, it is evident that nominal capacity must be equal to or less than load limit.

In addition, this example car indicates a star (*) to the left of the load limit, presumably to indicate that this car should not be loaded to the nominal capacity indicated, which would then cause the car to be loaded in excess of the allowable rail load. I do not believe the star was intended to be used this way. It is my thinking that the star should only appear on a car to the left of the load limit when the load limit and the light weight do not add up to the allowable rail load for the size of journals under the car. The most common application of this symbol is where structural limitations of the car prevent its being loaded to the load limit. This star has no relation to the theoretical car capacity based on journal size.

In proper application of Interchange Rules, I believe that in stenciling freight equipment the average light weight for a series of cars, to the next highest even hundred pounds, should be determined. This weight should then be subtracted from the allowable rail load based on the size of journals under the car. After the load limit has been determined in this manner, you should back off on the load limit to the next lower even 1,000 lb to obtain the nominal capacity. It is of no concern that this nominal capacity does not coincide with the journal capacity of the car. This information is readily available elsewhere on the car, if needed.

It is interesting to note that when the above practice is followed the nominal capacity will always be within 900 lb of the load limit, never more. This then gives rise to another question: What good is the nominal capacity stencil on the car?—*Glen D. Larsen, draftsman, mechanical department, Northern Pacific.*

A forum for railroaders who want to explore questions of importance to their industry, this column welcomes both questions and answers from readers at all levels of responsibility in the industry and associated fields. We'll pay $10 to any reader submitting a question that forms the basis for a column discussion. Address correspondence to Question and Answer Editor, Railway Age, 30 Church St., New York 7, N.Y.

Why Not Uniform Piggyback Numbers?

To the Question and Answer Editor:

I read with interest Elmer A. Duncan's question concerning "Why Not Uniform Piggyback Numbers?" in the July 18 issue [p. 13]. Mr. Duncan will be pleased to know that XTRA improvised a numbering system last year that properly identifies type and length of trailers.

It should first be explained that XTRA has more than 600 trailers being operated over 15 railroads that concur in XTRA's per diem plan. In brief, each trailer carries the reporting mark "XTRA" and a six-digit number which is recognized by the concurring railroads over which the trailers travel just as if XTRA were a railroad. Payment for use of a trailer by each concurring road is made through regular car accounting channels, based on junction records and monthly per diem statements.

The effect of this per diem plan is that concurring railroads have the use of this fleet of trailers on a per diem basis without the requirement of signing term contracts or making capital investments. XTRA's per diem charges are the same as those agreed upon among railroads on railroad-owned equipment.

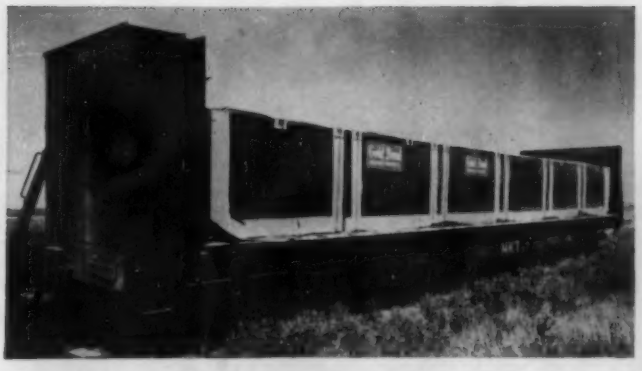
Because of the multiple interchange type operations under XTRA's per diem plan between the 15 concurring railroads, it was mandatory to have a uniform identification system. The first two digits of the six-digit number indicate the type and length of trailer. The last four digits indicate the fleet number of any given trailer. The numbering code follows:

First digit:
- 1—Van/Pickup/Delivery trailer
- 2—Van for dry freight
- 3—Van, insulated
- 4—Controlled temperature insulated van
- 5—Platform with chain binders
- 6—Open top with tarpaulin
- 7—Furniture type van—large cube
- 8—Automobile carrying trailer
- 9—Special

Second digit:
- 1—20 ft or less in length
- 2—21/32 ft
- 3—33/34 ft
- 4—35 ft
- 5—36 ft
- 6—37/39 ft
- 7—40 ft
- 8—Over 40 ft
- 9—Reserved for future

Third, fourth, fifth and sixth digits represent the fleet number assigned to a particular trailer. Example: Reporting mark "XTRA 570623" means trailer is a platform with chain binders and is 40 ft long. It is the 623rd trailer in the total fleet.

Although there are many other trailer specifications we would like to see included, it is impractical to consider a number of over six digits.—*John F. Prendiville, president, XTRA, Inc.*



N-S-F® KEEPS FLATCARS CLASS A, READY FOR SAFE, EASY LOADING

railroad: MISSOURI-KANSAS-TEXAS
shipper: NATIONAL GYPSUM COMPANY, ROTAN, TEXAS

Now Gold Bond Gypsum Wallboard goes to market the modern way. Here's how. Straps are attached to recessed lading anchors along the sides of an M-K-T flatcar equipped with NAILABLE STEEL FLOORING. The load is set in place, covered with weatherproof plastic and strapped down tightly. It's quick, safe and economical. Lift trucks move easily over the durable, anti-skid floor that's never weak or splintered. N-S-F, welded directly to the underframe, actually adds structural strength throughout the M-K-T car—keeps it in Class A condition and helps eliminate claim damage.

It's no wonder that—for more than 13 years—progressive shippers and railroads alike have recognized that N-S-F makes cars more rugged, more serviceable, more versatile.

Full information and cost studies are available from Stran-Steel representatives in Chicago, New York, Philadelphia, St. Louis, San Francisco, Minneapolis and Atlanta. In Canada, N-S-F is made and sold by International Equipment Co., Ltd., Montreal.
STRAN-STEEL CORPORATION, Detroit 29, Michigan.

Stran Steel® N-S-F

STRAN-STEEL IS A DIVISION OF NATIONAL STEEL CORPORATION

FIRST SPECIAL TRAIN arrived July 19 at the Santa Fe station. Twenty more special trains and six regular trains brought in 10,249 passengers on that day. July 20 rail arrivals numbered 9,913; July 21, 9,243.

30,000 Scouts Choose the RRs

► **The Story at a Glance: For the Fifth National Jamboree of the Boy Scouts of America, the majority of travelers went as they have in the past —by rail. All told, 30,000 Scouts traveled by rail to Colorado Springs, Colo., and back from every corner of the United States. Added up, their journeys amounted to close to 100,000,000 passenger miles, and required 68 special and 28 regular trains. Inbound movements arrived at one of Colorado Springs' three stations on July 19, 20 and 21. Departures were July 29, 30 and 31. Keeping track of transportation required a transportation staff of 30 men, including representatives of the Santa Fe, Colorado & Southern, Denver & Rio Grande Western and Rock Island (which serve Colorado Springs) and the Union Pacific and Baltimore & Ohio.**

When the Boy Scouts of America held their first national jamboree in Washington, D.C. in 1937, most of the Scouts participating traveled by rail as a matter of course. Several things have changed in the intervening 23 years, but most participants in last month's Fifth National Jamboree also traveled by rail, this time as a matter of choice.

Train travel was the choice of 30,397 of the Jamboree's 53,790 participants.

To handle the transportation problems of such a large group of people, all arriving in limited terminal facilities in a three-day period, the Boy Scout Jamboree Transportation Service under the direction of Kenneth Wells of Princeton, N.J., worked on detailed plans for a year.

Arrivals and departures, primarily a rail problem, were coordinated from the start with rail passenger men. Harold Eno, passenger traffic manager of the D&RGW, acted as chairman of the Terminal Lines Committee, which handled terminal arrangements in the Colorado Springs terminal area.

All train movements were handled over the three rail lines that enter Colorado Springs: Santa Fe, Rio Grande and Rock Island (plus the Colorado & Southern which has trackage rights over the Santa Fe and Rio Grande).

In Colorado Springs, AT&SF and D&RGW operate paired trackage: Southbound trains use the D&RGW depot; northbound, the AT&SF depot. C&S shares the Santa Fe—Rio Grande arrangement, while Rock Island has its own tracks and depot.

To handle switching moves during the heavy arrival and departure periods, D&RGW installed temporary automatic block signals on a loop permitting southbound trains to use the northbound station and vice versa. Complicating the problem, the railroads also had to find storage tracks for some 150 baggage cars during the layover.

For the move, participating railroads authorized special rates. Trunk-Line Central Passenger and New England territories set a rate for round-trip coach travel at 110% of one-way fare and for first-class at 140% of one-way fare. In the remainder of the country, coach travel rates were set at 90% of existing round-trip coach fares and first class (in heavyweight sleepers in special car or train and with a minimum of 30 passengers to a car) at 110% of round-trip coach rates. Pullman Company, for the occasion, granted a 10% reduction from standard rates for round trips in heavyweight sleepers.

About 30% of the traffic was in the standard heavyweight sleepers, Boy Scout Director Wells estimates. Coach movements presented something of a problem, since few of the participating roads were well-enough stocked to be able to take the number of cars required out of service long enough to move them to Colorado Springs and back. Solving the problem involved a good deal of equipment swapping and pooling of cars.

Dining cars were another problem. The Boy Scouts took all they could get, and borrowed 18 Army kitchen cars, to boot.

Should Costs Control Rates?

By ALAN WHITE*

The Action Page of the May 30 issue of Railway Age presents for discussion several rules which it is thought should be observed in the making of railroad freight rates.

These principles (advocating a "ceiling" on railroad rates at truck costs and a "floor" at railroad out-of-pocket costs) are sound economics and the railroads, particularly since the enactment of the Transportation Act of 1958, have been giving them increasing observance. The rules Railway Age suggests are, however, merely modifications, dictated by competitive and financial pressures, of the old monopoly rate concept of "charging what the traffic will bear."

What the industry needs, if it is to reverse the trend of "each year a smaller share of the total tonnage," is, as Professor Ernest Williams has pointed out, a new basic philosophy that will supplant, not supplement, the old.

As the railroads' average ton-mile cost is still the lowest of any overland carrier, the railroads ought to do very well indeed if they would simply apply the basic economic laws that govern any competitive enterprise.

The fundamental object of any business is to maximize its net income. This is not attained by raising prices on a diminishing traffic base as volume and profits fall, but requires:

- The optimum size of plant, so that the product, in consideration of demand, is produced at lowest unit cost.
- A price structure which, in consideration of the elasticity of the demand, will produce volume yielding the greatest total net revenue.

In practical language, these two principles mean that the transportation agency must assess the market for its services at the varying cost-price levels at which it can profitably produce those services; and adjust its facilities and equipment to the level which is the most profitable. It must at the same time price its services so that the desired volume of traffic is produced. It follows, therefore, that all of its rates must be closely related to cost since, under competitive conditions, the demand for virtually all classes of traffic is significantly influenced by price. Constant effort must be made to reduce costs, not only through improved operating efficiency, but by incorporating in the rate structure price incentives to encourage the tendering of traffic so loaded as to promote the lowest ton-mile cost to the carrier.

Railroads are mass transportation, and traffic is so varied and subject to such seasonal and cyclical fluctuations that it is impracticable to tailor rates to every movement. Broad averages, both as to costs and rates, should provide sufficient refinement for a class rate structure suitable to most traffic.

Railroad costs vary according to distance, class of equipment, weight of lading, and special services, such as those accorded perishable traffic and livestock. The basic rate structure could well be, therefore, a set of distance scales reflecting fully distributed costs, plus profit, expressed in units of dollars per car according to class of equipment and shipment weight. The actual charge would consist of the sum of the following cost elements:

1. A uniform, flat amount per car, representing terminal switching, billing, accounting, a claim factor, and all other per shipment costs that do not vary significantly as between carloads.

2. A line-haul factor reflecting average cost per mile for each type and size of equipment, according to weight of lading, multiplied by short-line miles.

3. Special service factors applicable only to such traffic as incurs costs, either line-haul or terminal, that are appreciably above the average.

Since the variable cost according to weight of lading is small, the weight brackets could be fairly large without creating objectionable differences in the charges for the various weight categories. All calculations in rating and billing would thereby be eliminated, except for adding the fixed and variable rates together to arrive at total charges.

For example, the average box car load in Eastern territory weighs 54,800 lb and the full per shipment costs are about $100. This average load can be moved at a cost of about 40 cents per mile. A rate that would pay all costs for a 100-mile haul would accordingly be a constant of $100 plus a variable of $40, giving a total of $140; and, for a 1000-mile movement, $100 plus $400 or a total of $500. These costs vary so little according to the weight of the lading that this rate would probably be applied to shipments ranging from 25 to 30 tons. For shipments in the 50-ton range the per-car charge would be $120 plus a line-haul charge of 50 cents per mile. In the 10-ton range the charges would be $80 and 30 cents per car-mile, respectively.

These examples follow the pattern of the Commission's rail cost formula. They have not been adjusted to reflect characteristics of traffic demand; and the writer is of the impression that the variation in charge according to weight in the examples is much greater than justified by actual operating experience, since the carriers have found it possible, in publishing their Plan 3 piggyback rates, to provide a flat charge in dollars per car up to 70,000 lb.

Billing and accounting would be simplified by having all charges in even dollars. Maximum flexibility could be achieved, since either the variable or fixed rate elements could be adjusted independently of the other, nationwide or territorially, as specific costs increased or declined. No classification would be required, as all traffic would be self-classifying according to its stowage, density, or service needs.

There would be a constant price incentive for shippers to use the largest available equipment and load it to its cubical or weight-bearing capacity. All class rate traffic would yield its fully distributed cost plus a profit and, aside from service considerations, the railroads should receive, at such class rates, all of the traffic for which they are the low-cost medium of transport.

A rate structure so devised, by insuring that no class rate traffic could be a burden upon other traffic, would, however, constitute only the foundation for the actions that must be taken to achieve maximization of net earnings. Full-cost rates would obviously so discourage the movement of commodities having a high ratio of transportation cost to delivered sales price that special commodity rates, either point-to-point or for more widespread application, would have to be made to encourage the optimum movement of specific classes of traffic.

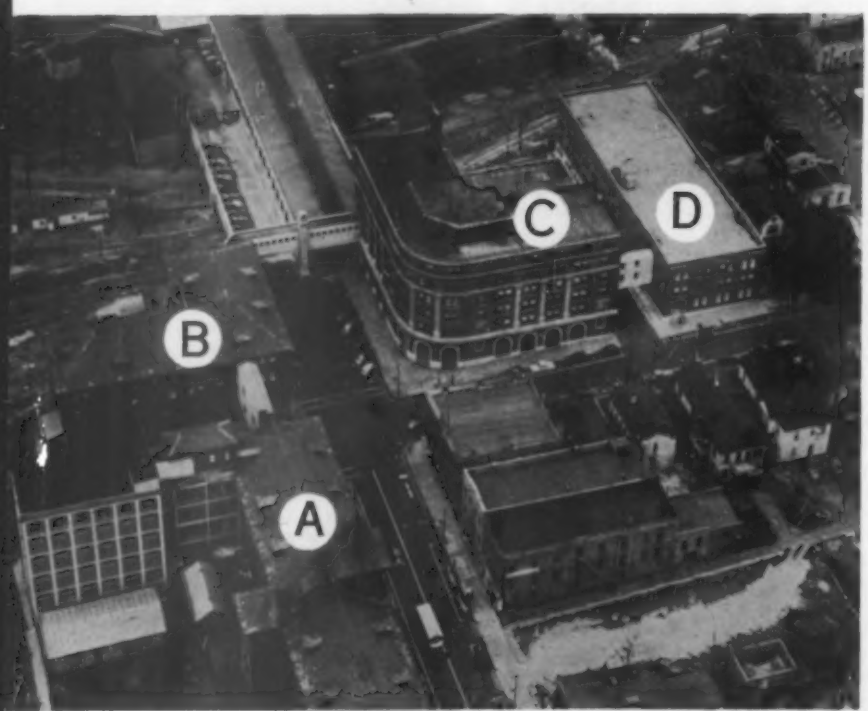
Under the plan here outlined, the making of class rates would become an exercise for the cost accountant, and the commodity rate-maker would come into his own as an expert assayer of the transportation economics of individual commodities.

The railroads' basic unit of production is the car-mile and the lowest, and therefore most competitive, rates which can be offered the public should be those which return the car-mile cost plus a profit—let the public load what it will in the cars.

*Mr. White is Assistant Director, Pricing Division, Railway Express Agency. The opinions expressed in this article are Mr. White's, not those of the REA.

NEW HEADQUARTERS in Jacksonville, Fla., which took nearly two years to build, contains 5,486 tons of steel and 17,000 cubic yards of concrete. Y-shaped structure, rising 17 stories over St. Johns River, rests on 1,956 concrete piles, has 475,000 sq feet of floor space. ACL is leasing five floors in the new building to other tenants.

ACL Moves Into New Home



OLD BUILDINGS in Wilmington, N. C., are lettered A, B, C, D in order of their construction. Departing Coast Line gave them to the city.

The Atlantic Coast Line, after 60 years' official residence in Wilmington, N.C., decided some time ago to pack up and move down the road a piece—quite a piece. Last week, showing hardly a strained muscle, ACL completed the substantial task of transporting 2,000,000 pounds of office equipment and records, 3,000,000 pounds of employees' household goods, and 950 Coast Line families nearly 500 miles down the line to Jacksonville, Fla.

There was something for everybody in the move—even the city that got left behind:

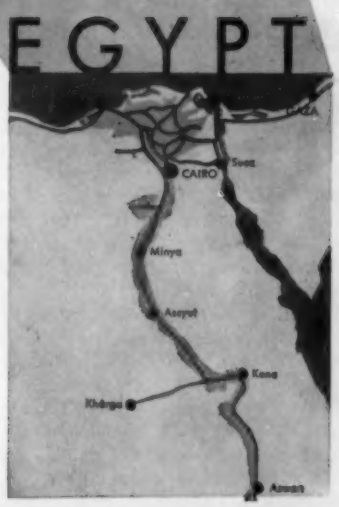
- For Coast Line, a handsome new steel, concrete and glass home soaring 17 stories over the St. Johns River on prime Jacksonville property.
- For Jacksonville, a population increase of 2,500 (including 500 school children), a new annual payroll of $7,000,000, and a booming real estate market.
- And for Wilmington, a parting gift: title to four general office buildings (independently appraised at $1,500,000) which the railroad no longer needs. Said ACL President W. T. Rice: "It is the strong desire of both the company and its employees that there

(Continued on page 18)

HENSCHEL

HENSCHEL-GM MODEL KK 16
DIESEL ELECTRIC-LOCOMOTIVE
1900 HP A1A - A1A 132 tons

Since 1957, thirteen of these locomotives have been in continuous service in Egypt and have already proved their versatility by hauling ore trains from Aswan one day, and express trains to Alexandria the next.



108*) MORE

have subsequently been ordered by
EGYPTIAN RAILWAYS

*) 38 Model AA 16
70 Model AA 12

HENSCHEL-WERKE GMBH KASSEL GERMANY

ACL MOVES INTO NEW HOME (*Continued from page 16*)

be left behind a memento to show our appreciation for the harmonious relationship which has existed between the railroad and the city for so many years."

The move went smoothly, thanks to months of painstaking planning by President Rice and a special move committee headed by Donald T. Martin, director of public relations and advertising.

All of the old office furniture was left behind. But there remained the job of packing, moving and unpacking some 50 carloads of office files. It began July 5, when the office of the chief engineer was packed up and sent on its way in three freight cars. It ended last Wednesday with the arrival in Jacksonville of the law and tax departments. (One of the late arrivals was President Rice himself, whose 15th floor office in the new building was among the last to be completed. He officially changed offices Aug. 1.)

The office move followed a tight schedule drawn up last winter. First, it was assumed that each office would have to be "down" for two days—one for packing, one for unpacking. Then surveys were made to determine the critical time of month for various departments. As a result, the move was accomplished with no interruption in the normal operations of the road.

An equal amount of planning went into the orderly exodus of Coast Line families.

Beginning last winter, ACL ran special cars from Wilmington to Jacksonville on weekends to give employees an opportunity to shop for new homes. A 41-page move manual was issued, giving tips on everything from home-buying to dog-licensing. Information centers were set up in both Wilmington and Jacksonville. Jacksonville's city fathers cooperated enthusiastically; they even met arriving families at the station with orange juice, rolls and coffee.

Most families began moving after school was out. Their household goods moved in a total of 275 trailerloads—principally via ACL piggyback. In many cases, families traveled on the same trains with their furniture. Trailers were loaded by professional movers and placed on flat cars which were coupled to a passenger train leaving Wilmington at 5 p.m. At Florence, S. C., the piggyback flats were switched to the head of Coast Line's hot-shot freight No. 109. The furniture van would thus arrive in Jacksonville not long after the family, and would be unloaded the same day.

Railroading After Hours with Jim Lyne

TIMELY TURNIPS—On the question of how watches got to be called turnips, NKP's assistant to personnel director, E. G. Psolla, recalls the jingle: "If wishes were horses, then beggars would ride." The concluding couplet goes: "If turnips were watches, I'd wear one by my side." I have the same information from Agent N. Giegerich of the DWP at Cook, Minn., and from Mechanical Department Office Manager F. L. Leaver of the SP at San Francisco. It would be hard to find a more plausible answer to the question than this.

LIVELY LITERATURE—There is a challenging piece called "Marketing Myopia" in the current issue of Harvard Business Review that takes a lot of big business apart for not "diversifying," instead of sticking to one product that consumers may get tired of. For example, it suggests that electric utilities may run into trouble from "a powerful chemical fuel cell which could sit in some hidden closet of every home silently ticking off electric power." The author raps the railroads for not diversifying—apparently unaware of their strenuous efforts to do so—and the regulatory obstacles they must first surmount.

The most comprehensive outline I've seen yet, of all the things that need to be done to get national transportation policy back on the rails, is the Department of Commerce pamphlet "Rationale of Federal Transportation Policy" by Ernest Williams and David Bluestone (price 30 cents). Here, as I see it, is real economic reasoning at work on transportation—and with candor and depth you seldom see in a government document.

INDUSTRIAL STRIFE—My Dad railroaded for almost 40 years, during all of which time he was an ORC member and he never once was called out on strike. The reason, of course, was that a striker in those days got no unemployment pay and he ran at least a 50-50 chance of losing his job and his seniority. Train and engine crews won their reputation as "conservatives" because they were too smart to take a chance by walking out in a dispute of trifling importance.

At this writing, Long Island trainmen have been out 3 weeks and are getting around two-thirds of their regular pay for not working—about half of it out of railroad unemployment insurance. Government monkeying with management-union relations has been done under the pretext of promoting "industrial peace."

With the law as it stands today, it's a tribute to railroad employees' self-discipline that they walk out as seldom as they do.

DEPRECIATION—A fellow was telling me the other day about a trucking company that fully depreciates its tractors in four years. With such a depreciation practice, a company never lacks untaxed money to provide replacements—and inflation doesn't have time in four years to raise the price too much.

Because of the slow depreciation of railroad equipment, the inflow of cash is modest—and replacements may well cost three or four times as much as the property written off.

Most businesses are hollering about the government's inadequate depreciation allowances—but railroads have a right to a bigger beef than anybody. Not only are their depreciation rates much lower than average, but they have such poor net earnings out of which to make up the difference between depreciation charges and the cost of replacements. The set-up is just plain murder for the railroads—and also for their suppliers.

How to Plan for Microwave

► **The Story At a Glance: When planning for microwave installations, two major factors must be weighed: (1) the costs involved; and (2) engineering considerations.**

The following article summarizes a report presented at the recent meeting of the AAR's Communications Section by its Committee 4, Radio and Allied Communications. The report was prepared by R. C. Karvwatt, director of communications, New York Central, with contributions by L. R. Thomas, superintendent of communications, system, Santa Fe; L. E. Kearney, communications, engineer, AAR; and C. J. Nelson, assistant superintendent communications, engineering, Rock Island.

Railroads already have extensive wire plants, which complicate any study of the costs of installing a microwave system. The initial installation cost of any system will be a function of a number of channels in the system length. To make a cost comparison of two systems, an elimination of all factors common to both will simplify the problem.

When comparing any two systems, operation of the terminal equipment will be identical for both systems. The same number of channels will be terminated on the switchboard, and operated by the same number of operators.

When comparing a multiplex channel radio (microwave) system with an open wire system, the radio system cost will include such things as the terminal carrier multiplex system, the intermediate relay stations, the terminal radio stations, and power equipment—which are not required for an open wire system.

Multiplex and Cable

Since both a multiplex channel radio system and a cable carrier system require terminal carrier multiplexing equipment, their costs will not be included in either system. On the other hand, the cable system will include the intermediate carrier repeater equipment which is not required in a through-radio multiplex system.

A system with a low initial cost may have a higher annual and a higher overall total cost than one with a comparatively higher initial cost, if salvage valuation, depreciation and maintenance costs are higher. Therefore, to obtain a true economic picture of a given system, cost comparisons must include initial costs, comparative annual operating costs, and the total cost over the system's entire expected life. To obtain true annual operating costs, material and labor must be multiplied by: (1) interest on invested capital, (2) depreciation, and (3) maintenance costs.

The initial cost of an open wire system should include the line survey cost, the cost of the right-of-way for the pole route, cost of the poles, cost of wire and fittings, and the labor on each.

To arrive at the cost of a cable system, the estimate should include the line survey cost, the right-of-way costs, the cable trench opening and closing, cable laying and man-holes for an underground cable and the cost of poles, erection and installation, if the cable is of the aerial type. The cost of repeater stations, loading cases and repeater equipment is required.

The microwave system cost components are survey cost including engineering and transportation, the costs of land, buildings, roads, towers, antennas, radio equipment, power equipment and various accessory items, such as power, fences and housing. Annual operating charges contain the same factors, regardless of which system is employed. These include amortization, interest, taxes and maintenance charges.

For estimating purposes, amortization, interest, taxes and maintenance can generally be applied as a percentage of the total initial cost of the system. The maintenance cost factor will vary with the various items which comprise the system—for example, the maintenance cost of station buildings, of towers and antennas, of power equipment, of radio equipment, of carrier wire lines, wire line repeater stations and repeaters.

The typical railroad case involves either the requirement for additional circuits or replacement of existing circuits. The present cost of operation of the existing plant should be determined. Any savings in maintenance or operation through installation of microwave should be subtracted from the present costs. The microwave costs should then be added to determine the composite cost.

The addition of microwave will generally result in the removal or salvage of some part of the existing plant. The net salvage value of the plant will reduce the amount of capital required for the new facilities.

The cost of the combination wire and microwave system may then be compared with the cost of an all-wire system.

In calculating the cost of the all-wire system, the line survey cost and cost of right-of-way for the pole route will not be a factor unless the wire line route for the new section is not the same as the original route. It may be necessary to compute the costs of poles, as the additional facilities may require strengthening of the pole line.

Where the addition of a large number of channels is required, it can be shown that the microwave system cost will be lower than that of the wire line system. For smaller numbers of channels, particularly where transposition of existing wire is not required, the installation cost of the wire plant may be less expensive than that of the radio system.

Lower Maintenance Costs

Considering all factors, maintenance costs will generally be lower in the case of the radio system. The intangible advantages in the form of expansion capability, flexibility and ability to handle high speed data and facsimile must also be weighed when making this comparison.

As for engineering considerations, it is necessary, first of all, to determine carefully the present circuit requirements as well as to plan for calculated expansion. Once a circuit layout has been determined, microwave terminals or repeaters should be planned as close to the major drop out points as possible. Local terrain features must be considered. Propagation requirements and intermediate terrain features will then indicate possible locations for the other required repeaters.

A simple line diagram of the proposed system should be prepared first, showing as much detail as is practical. It should indicate for each circuit the type of service, termination at each end, type of signaling required, or special considerations such as may be used on alarm and supervisory channels, or radio control channels.

In planning a microwave system, it may be beneficial to retain portions of an existing pole line with reduced wire facilities to provide a local telephone and telegraph service to smaller stations and to intermediate locations for signaling without providing drop out and insertion facilities at each repeater.

Various types of channels will be required.

Alarm and supervisory channel is normally used by maintenance and sup-

(Continued on following page)

ervisory personnel for normal maintenance purposes and is dropped at each repeater and is provided with selective calling or ringing of each point. In addition, each repeater can automatically report to a central point a number of alarm conditions: failure of commercial power, failure of RF equipment, failure of tower lights and almost anything else necessary to report, so that corrective measures can be taken.

Radio control channels may be provided over a single voice channel with insertion and drop out at each repeater where a base radio station will be required to provide adequate coverage to mobile units over the entire area, or a separate voice channel may be utilized for each base station from the dispatcher's location.

Trunk Voice Channels

Trunk voice channels are normally two wire drops connected at each end to switchboards. They are provided with 20-cycle ringdown, if used between manual switchboards, or E & M signaling if used between automatic switchboards. Signaling as provided on the microwave must also work properly into and out of the carrier.

For local voice channels, it may be necessary to extend beyond the microwave or pick up between repeater points local way stations and pole boxes for dispatching or conversation purposes. In this case, it is important that proper provisions be made to insure that the connection of the physical pair to the microwave does not appreciably reduce transmission levels due to bridging losses, and that proper applique units are provided at these points to transfer selective ringing from the microwave to the physical, and also to permit transfer of 20-cycle ringing in the case of conversation circuits, from the physical to the microwave.

Trunk printer or Morse circuits may be placed together within a voice channel or a number of voice channels, or should be capable of being operated as speech plus duplex for possible extension over open wire carrier along with the associated voice channel to some other location. These circuits may be either half or full duplex as required and should be capable of being extended over carriers or standard duplex equipment.

Local printer or Morse circuits: Party line operation with drop out and insertion of telegraph signals at numerous intermediate points on a microwave system is normally very difficult and expensive. It is suggested that consideration be given to handling messages to smaller offices by telephone and trunk printer circuits to the larger offices. As an alternate, these facilities may be furnished over a pair retained for dispatching either by using the simplex or by normal carrier methods.

CTC and signaling channels normally consist of a voice channel with one or more duplex telegraph channels. If three channels or less of duplex are required, they can be obtained through speech plus duplex over the signaling voice channel if of adequate width, but if more are required a separate voice channel will be required for the signaling. Normally no form of ringing or signaling is required on the voice channel. This circuit will require careful consideration to be sure both the voice and duplex circuits are terminated properly and that adequate equipment is provided to insure its reliable operation.

Channels for special services may be required for data transmission, facsimile, closed circuit TV, etc. It is suggested that these applications be reviewed thoroughly to determine feasibility, and that the base band to be provided by the microwave will be capable of handling the wide band widths that are proposed, with the degree of reliability demanded of this type of service.

Geographical Location

Having completed the circuit planning, the problem of geographical location of the various radio terminals and repeaters can be considered. Microwave radio energy travels in relatively straight lines. Under ordinary conditions, the distance between stations will be limited to line of sight. The microwave radio waves are focused into narrow beams by high gain antenna systems. This narrow beam of energy is analogous to a beam of light. It is subject to obstruction or attenuation by solid objects, reflection from flat surfaces, diffraction around the edges of solid objects, and refraction or bending by the atmosphere. Unlike cable and wire systems where propagation losses are always constant, a microwave system is subject to continuing variations in received signal level.

The following propagation factors should be carefully analyzed: free space attenuation, fading, weather effects and reflection.

Microwave propagation path surveys provide information for preliminary cost estimates of a microwave system, provide information for the Federal Communications Commission, and provide information upon which to guarantee reliable microwave operation. A preliminary paper survey is usually made to determine the number of repeater stations and approximate tower heights required. From this information, the preliminary cost estimate can be made. The final field survey assures reliable microwave propagation between all stations and establishes exact site locations and other information required for filing FCC construction permit applications.

A clear line of sight transmission with adequate clearance above all intermediate obstructions must be established by this final field survey. Using the data collected during the surveys, a topographical profile chart should be prepared for each path to show the elevation of all important points, such as hills, ridges, buildings, trees and other obstacles which might interfere with line of sight transmission.

Use of Contour Maps

Contour maps of most areas of the U. S. are available from national, state and county agencies. Aeronautical charts are useful as a source of information in arriving at the general route. Microwave terminal and repeater locations should be plotted on the available maps. Elevation data should be taken from each map and plotted on the profile chart.

After the map study, a field survey must be made. Three methods can be used to determine path clearance: optical, altimetry or aerial.

The clearance of a path can often be verified by visual sighting from one end to the other with a pair of field glasses or a telescope. Greater accuracy can be obtained by using a transit. When it is not possible to sight directly with optical instruments, clearance may be checked during the day through use of a flashing mirror, or, at night, through use of lights. These imprecise methods should be supplemented by checking the altitude of prominent features by an altimeter.

Altimeters used in path survey work should be of a precision surveying high accuracy type. Accuracies in the order of five feet can be obtained through use of these instruments. Two altimeters should be used, both instruments adjusted to the known elevation at a bench mark location. One altimeter should remain at this point, and the other taken to the point to be measured. Temperature and elevation readings

(Continued on page 30)

• One of the Milwaukee Road's new 50-ton covered hopper cars used to transport bulk shipments of granular and powdered cargoes.

4 big reasons why leading railroads use POLYCLUTCH LINING FOR COVERED HOPPER CARS

More and more railroads are using Pittsburgh's POLYCLUTCH Lining in covered hopper cars.

• **Its time- and money-saving advantages** have been thoroughly proved in service in thousands of cars hauling a wide variety of powdered and granular ladings.

• **Carefully detailed records** show POLYCLUTCH cuts maintenance and handling costs these four important ways:

1. **Goes on fast and easy.** Apply two coats by hot or cold spray.
2. **Speeds cargo handling.** Ladings will not cling to its hard, non-porous surface.
3. **Eliminates contamination loss.** POLYCLUTCH is non-toxic, odorless and tasteless, has no damaging effect on foodstuffs. Reduces cleaning and sanitation problems, too.
4. **Cuts maintenance cost.** Being tougher and more flexible, POLYCLUTCH has greater resistance to abrasion, impact and repeated cleanings. Also withstands corrosive acids, alkalis, mold, mildew and fumigants.

POLYCLUTCH-lined covered hopper cars have been hauling the following products for years:

Flour	Ammonium nitrate
Oat flour	Vinyl plastic resins
Graham flour	Polyethylene
Durum flour	Polystyrene
Sugar—	Para formaldehyde powder
cane or beet	Diamathaceous earth
Cerelose	Carbon black
Corn cones	Various clays
Starch	Powdered iron ore
Rice	Alumina ore
Cracked wheat	Bauxite
Feed ingredients	Calcined gypsum
Mill feed middlings	Cement
Mill feed aureomycin solids	Hydraulic lime
Soybeans	Phosphate rock
Soybean meal	Sulphur
Cottonseed meal	Potash
Farina	Sodium tripoly phosphate
Dehydrated alfalfa	Tetra sodium phosphate
Brewers' grits	Milo
Borax	Roofing granules
Boric acid	Bisphenol "A"
Sodium sulphate	Bentonite

POLYCLUTCH Lining is approved by the U.S. Food and Drug Administration

PITTSBURGH® PAINTS
PAINTS • GLASS • CHEMICALS • BRUSHES • PLASTICS
PITTSBURGH PLATE GLASS COMPANY
IN CANADA: CANADIAN PITTSBURGH INDUSTRIES LIMITED

Freight Operating Statistics of Large Railroads—Selected Items

Region, Road and Year		Miles of road operated	Locomotive Miles: Train miles	Locomotive Miles: Principal and helper	Locomotive Miles: Light	Car Miles: Loaded (thousands)	Car Miles: Per cent loaded	Ton-miles (thousands): Gross excl.locos & tenders	Ton-miles (thousands): Net rev. and non-rev	Road-locos. on line: Serviceable: Unstored	Road-locos. on line: Serviceable: Stored	Road-locos. on line: B.O.	Road-locos. on line: Per cent B.O.
New Eng. Region	Boston & Maine 1960	1,550	227,625	227,995	2,875	8,302	59.2	604,669	223,344	78	2	17	17.5
	1959	1,550	222,848	223,107	4,142	8,402	60.3	596,866	230,930	76	1	26	25.2
	N. Y., N. H. & Hartfd. 1960	1,739	265,208	266,410	14,117	9,599	60.9	656,573	252,980	66	..	12	15.4
	1959	1,739	252,073	252,073	14,962	10,046	62.9	675,451	271,164	66	..	16	19.5
Great Lakes Region	Delaware & Hudson 1960	763	164,818	166,086	1,911	8,575	66.4	552,459	273,959	35	..	5	12.5
	1959	764	156,220	157,728	1,982	7,697	65.9	541,713	271,976	37	..	5	11.9
	Del., Lack. & Western 1960	941	225,765	231,406	10,147	9,501	63.4	668,547	275,601	58	..	5	7.9
	1959	918	229,767	235,421	11,788	9,838	64.7	679,898	283,924	57	..	5	8.1
	Erie 1960	2,239	540,900	542,845	12,367	27,695	66.2	1,816,074	710,816	170	..	4	2.3
	1959	2,201	524,654	526,809	12,155	27,916	66.6	1,796,164	710,229	167	3	4	2.3
	Grand Trunk Western 1960	951	205,063	205,126	1,175	6,885	57.8	490,144	186,461	43	..	1	2.3
	1959	951	217,401	218,016	1,663	6,732	56.9	525,595	202,124	44	12	25	30.9
	Lehigh Valley 1960	1,114	181,641	183,746	4,945	7,712	62.3	544,089	240,864	29	..	5	14.7
	1959	1,116	196,482	198,668	4,076	8,558	64.9	596,739	273,973	28	..	6	17.6
	New York Central 1960	10,326	2,071,268	2,080,073	84,432	83,882	55.5	6,778,471	2,783,993	448	..	50	10.0
	1959	10,391	2,014,748	2,026,542	84,422	84,282	58.4	6,586,377	2,782,321	452	..	42	8.5
	New York, Chic. & St. L. 1960	2,155	603,181	603,181	5,503	25,978	60.3	1,960,904	832,582	104	25	11	7.9
	1959	2,155	595,507	595,507	4,487	27,022	63.3	1,953,927	857,529	104	31	4	2.9
	Pitts. & Lake Erie 1960	220	53,952	53,952	....	2,242	59.1	218,373	127,170	14	..	1	6.7
	1959	221	57,157	57,157	....	2,404	63.2	223,325	131,026	13	..	1	7.1
	Wabash 1960	2,400	394,986	395,129	3,742	18,856	63.8	1,315,550	537,372	112	..	3	2.6
	1959	2,379	486,734	488,214	4,444	20,505	62.9	1,431,600	579,444	112	..	2	1.8
Central Eastern Region	Baltimore & Ohio 1960	5,794	1,313,873	1,397,007	93,359	55,955	59.2	4,660,733	2,225,010	385	40	34	7.4
	1959	5,802	1,287,306	1,380,295	89,183	56,864	60.1	4,530,412	2,184,273	395	78	25	5.0
	Bessemer & Lake Erie 1960	203	50,566	51,334	106	2,051	66.2	218,511	139,937	15	..	..	..
	1959	203	45,624	45,744	55	2,105	71.1	225,424	150,304	15	..	..	..
	Central RR Co. of New Jersey 1960	594	105,160	106,312	5,332	3,737	64.7	291,702	154,165	68	4	1	1.4
	1959	597	110,529	111,885	5,795	4,110	64.0	316,380	165,914	62	..	2	3.1
	Chicago & Eastern Ill. 1960	863	96,214	96,214	1,412	5,100	61.2	401,814	209,183	29	..	3	9.4
	1959	863	113,977	113,977	2,434	5,779	63.4	450,279	227,850	25	..	7	21.9
	Elgin, Joliet & Eastern 1960	205	63,212	63,886	....	2,049	59.8	177,853	97,566	41	2	..	..
	1959	205	69,835	70,524	....	2,419	61.5	202,968	109,900	42	1	1	2.3
	Pennsylvania System 1960	9,831	2,608,959	2,749,768	176,730	111,729	60.6	8,721,296	4,057,117	701	1	66	8.6
	1959	9,865	2,690,372	2,824,634	172,726	115,512	63.6	8,629,956	4,069,074	702	..	80	10.2
	Reading 1960	1,302	268,244	269,074	8,250	10,474	58.4	917,096	480,474	144	3	23	13.5
	1959	1,302	287,735	289,417	9,631	10,792	59.4	924,853	482,723	152	4	27	14.8
	Western Maryland 1960	843	136,962	142,745	8,578	6,083	63.7	541,104	307,718	42	..	1	2.3
	1959	844	149,240	155,514	9,451	6,613	64.2	584,416	332,515	43	..	2	4.4
Pocahontas Region	Chesapeake & Ohio 1960	5,060	1,151,668	1,152,695	20,294	53,627	56.0	4,765,720	2,615,299	582	..	50	7.9
	1959	5,061	1,120,102	1,122,528	20,011	53,391	55.4	4,713,910	2,603,571	604	2	29	4.6
	Norfolk & Western* 1960	2,722	744,325	759,203	27,523	39,214	55.0	3,889,283	2,136,542	152	13	7	4.1
	1959	2,724	725,856	750,127	38,031	37,830	55.3	3,663,199	1,981,401	213	34	17	6.4
	Rich., Fred. & Potomac 1960	110	38,637	38,637	840	2,497	60.2	177,935	71,234	14	..	1	6.7
	1959	110	36,990	36,990	803	2,439	62.0	166,506	65,495	14	..	1	6.7
Southern Region	Atlantic Coast Line 1960	5,563	720,625	720,625	7,016	28,047	57.9	2,211,667	1,030,753	131	..	1	.8
	1959	5,602	715,434	715,434	8,038	27,235	57.8	2,155,857	1,003,590	131	..	2	1.5
	Central of Georgia 1960	1,712	184,478	184,478	2,227	7,743	64.3	600,413	301,400	33	..	1	2.9
	1959	1,712	187,139	187,139	1,677	7,702	66.2	584,762	292,933	34	..	1	2.9
	Florida East Coast 1960	572	103,327	103,327	....	3,979	49.4	326,096	110,538	44	6	..	..
	1959	572	127,368	127,368	....	3,946	52.9	307,557	104,165	53	..	..	..
	Gulf, Mobile & Ohio 1960	2,717	256,372	256,372	38	14,480	65.7	1,046,202	502,103	86	..	5	5.5
	1959	2,717	260,116	260,116	479	15,171	68.1	1,069,103	519,822	86	..	5	5.5
	Illinois Central 1960	6,500	955,034	955,034	25,115	45,439	61.5	3,226,007	1,497,491	178	7	57	23.6
	1959	6,439	995,065	995,065	27,194	45,130	61.3	3,331,877	1,534,994	193	30	154	40.8
	Louisville & Nashville 1960	5,666	928,886	931,469	14,947	36,913	59.7	3,001,874	1,494,680	168	..	4	2.3
	1959	5,679	841,992	843,187	13,816	34,905	62.8	2,691,705	1,364,002	162	..	3	1.8
	Seaboard Air Line 1960	4,134	600,989	600,989	2,620	25,629	58.4	2,065,599	963,309	121	..	4	3.2
	1959	4,135	605,709	605,709	1,617	25,163	58.5	1,986,617	916,568	129	..	4	3.0
	Southern 1960	6,242	840,289	840,419	8,488	40,296	63.0	2,882,274	1,159,825	198	5	4	1.9
	1959	6,243	821,350	821,542	9,801	40,094	64.5	2,781,668	1,301,982	197	..	5	2.5
Northwestern Region	Chicago & North Western 1960	9,244	823,378	823,378	9,386	31,048	59.9	2,438,590	1,089,169	193	..	13	6.3
	1959	9,251	873,354	873,354	9,038	32,581	61.9	2,441,277	1,064,181	169	..	15	8.2
	Chicago Great Western 1960	1,437	132,682	132,682	218	6,732	65.8	478,913	222,962	24	..	3	11.1
	1959	1,437	133,529	133,529	203	6,957	66.0	492,393	229,206	24	..	2	7.7
	Chic., Milw., St. P. & Pac. 1960	10,590	783,977	791,338	8,479	35,126	62.1	2,541,772	1,109,488	156	17	4	2.3
	1959	10,583	846,174	858,322	13,341	38,513	64.7	2,671,765	1,197,658	285	7	9	3.0
	Duluth, Missabe & Iron Range 1960	575	79,779	79,880	257	3,882	50.5	420,221	251,494	81	22	2	1.9
	1959	557	57,998	58,078	346	2,476	53.0	261,256	151,865	60	23	4	4.6
	Great Northern 1960	8,300	907,252	911,781	23,638	38,563	62.4	2,909,752	1,349,866	286	11	5	1.7
	1959	8,281	903,833	905,360	23,367	39,399	64.8	2,850,644	1,316,215	273	..	13	4.5
	Minn., St. P. & S. Ste. Marie 1960	4,168	337,527	338,054	417	12,367	65.9	839,969	386,700	92	..	2	2.1
	1959	4,169	359,346	360,315	946	12,888	66.7	874,689	402,103	85	8	6	6.1
	Northern Pacific 1960	6,533	775,957	783,658	10,671	33,194	63.0	2,331,696	1,018,401	240	7	2	.8
	1959	6,533	775,000	782,766	10,357	33,584	65.2	2,298,963	1,014,276	233	9	3	1.2
	Spokane, Portland & Seattle 1960	935	138,719	138,719	1,133	6,292	72.5	426,699	205,809	25	..	1	3.8
	1959	935	143,214	143,214	1,299	6,170	72.1	413,863	196,028	56	..	1	1.8
Central Western Region	Atch., Top. & S. Fe (incl. G. C. & S. F. and P. & S. F.) 1960	12,970	2,791,413	2,944,132	50,292	119,442	60.7	8,920,241	a3,477,491	632	..	28	4.2
	1959	13,084	2,668,207	2,859,099	65,543	117,134	60.9	8,665,643	3,329,196	568	4	109	16.0
	Chic., Burl. & Quincy 1960	8,625	985,599	981,501	25,198	42,589	64.8	2,965,182	1,307,821	137	3	79	36.1
	1959	8,652	1,050,588	1,047,832	30,197	45,064	66.9	3,050,081	1,360,037	153	10	74	31.2
	Chic., Rock I. & Pac. 1960	7,511	963,271	970,662	2,098	37,954	59.8	2,856,986	1,152,289	201	..	5	2.4
	1959	7,520	1,008,285	1,009,694	1,621	40,330	62.7	2,890,622	1,186,432	191	..	5	2.6
	Denver & R. G. Western 1960	2,128	293,197	309,919	28,979	14,368	75.4	978,047	488,324	81	6	8	8.4
	1959	2,128	281,256	299,005	27,984	13,893	73.3	955,996	470,312	81	7	10	10.2
	Southern Pacific 1960	8,009	2,092,134	2,179,002	140,983	97,400	64.3	6,907,482	2,939,399	702	17	34	4.5
	1959	8,011	2,169,143	2,248,609	135,919	99,975	64.2	7,049,062	2,966,419	681	4	36	5.0
	Union Pacific 1960	9,747	1,872,597	1,898,660	56,059	94,605	63.9	6,535,777	2,782,221	335	36	69	15.5
	1959	9,745	2,150,043	2,177,814	65,572	98,414	62.2	6,853,047	2,830,296	340	27	113	23.5
	Western Pacific 1960	1,188	273,217	279,826	23,293	10,608	67.3	720,324	319,381	52	..	1	1.9
	1959	1,189	264,042	270,168	29,139	10,618	68.5	707,762	314,649	45	..	1	2.2
Southwestern Region	Kansas City Southern 1960	886	122,866	122,880	62	7,897	64.6	609,709	288,437	23	..	1	4.2
	1959	886	122,500	122,525	142	7,999	66.2	598,245	280,263	23	..	1	4.2
	Louisiana & Arkansas 1960	746	76,615	76,615	....	3,744	63.8	390,515	145,499	18	..	..	..
	1959	746	80,695	80,695	11	3,744	62.9	396,912	139,686	16	..	..	..
	Mo.-Kans.-Texas Lines 1960	2,915	237,153	237,153	2,257	9,888	62.4	732,325	319,972	53	..	1	1.7
	1959	2,914	207,268	207,268	1,990	10,753	63.6	775,261	346,248	52	..	3	5.5
	Missouri Pacific 1960	9,413	1,187,528	1,187,528	8,541	55,693	63.6	4,066,946	1,851,783	213	..	11	4.9
	1959	9,513	1,151,396	1,151,396	8,527	54,166	63.4	3,911,261	1,745,028	224	8	14	5.7
	St. Louis-San Francisco 1960	4,506	583,439	583,439	5,498	23,849	68.3	1,616,785	762,747	103	..	13	11.2
	1959	4,536	570,184	570,184	5,805	24,184	67.9	1,667,025	793,676	102	..	7	6.4
	St. Louis Southw. Lines 1960	1,554	350,710	350,710	4,093	16,900	69.2	1,119,459	500,414	37	..	1	1.7
	1959	1,554	329,198	329,198	3,906	15,970	72.4	1,004,242	448,911	30	..	1	2.0
	Texas & New Orleans 1960	4,078	587,460	587,460	....	28,389	65.4	2,034,572	943,911	138	..	2	1.4
	1959	4,154	631,551	631,551	1,162	28,487	65.9	1,990,555	905,651	146	..	1	.7
	Texas & Pacific 1960	1,819	278,202	278,202	2,674	12,486	61.7	953,009	366,093	38	..	2	5.0
	1959	1,822	289,136	289,136	2,718	12,661	64.0	924,856	368,777	37	..	1	2.6

For the Month of April 1960 Compared with April 1959

Region, Road and Year		Freight cars on line: Home	Foreign	Total	Per Cent B.O.	G.t.m.per train-hr. exc.locos and tenders	G.t.m.per train-mi. excl.locos and tenders	Net ton-mi. per train-mile	Net ton-mi. per l'd car-mile	Net ton-mi. per car-day	Car miles per car-day	Net daily ton-mi. per road-mi.	Train-miles per train-hour	Miles per loco. per day
New Eng. Region	Boston & Maine	1960 2,265	6,953	9,218	3.9	42,079	2,662	1,027	28.1	808	48.6	5,018	15.8	89.5
		1959 2,222	7,053	9,275	3.4	43,836	2,683	1,038	27.5	806	48.6	4,938	16.4	82.1
	N. Y., N. H. & Hartfd.	1960 4,165	12,974	17,139	8.7	40,170	2,476	954	26.4	471	29.3	4,849	16.2	141.9
		1959 3,164	14,207	17,371	4.9	43,721	2,680	1,076	27.0	534	31.4	5,198	16.3	128.8
Great Lakes Region	Delaware & Hudson	1960 4,046	4,618	8,664	7.7	62,829	3,368	1,670	31.9	1,067	50.3	11,969	18.7	155.4
		1959 3,860	5,931	9,791	10.3	63,949	3,486	1,750	35.3	998	38.6	11,866	18.4	143.5
	Del., Lack. & Western	1960 5,671	7,842	13,513	13.8	55,325	2,997	1,236	29.0	653	35.5	9,763	18.7	141.8
		1959 5,665	8,243	13,908	10.4	53,113	3,004	1,254	28.9	680	36.4	10,310	17.9	147.7
	Erie	1960 10,783	14,115	24,898	11.2	72,594	3,386	1,325	25.7	929	54.7	10,582	21.6	117.0
		1959 10,713	14,634	25,347	7.3	72,760	3,447	1,363	25.4	923	54.5	10,756	21.3	115.5
	Grand Trunk Western	1960 5,129	6,327	11,456	7.3	56,782	2,396	912	27.1	519	33.2	6,536	23.8	159.8
		1959 4,997	9,447	14,444	5.4	54,247	2,433	935	30.0	470	27.5	7,085	22.4	101.5
	Lehigh Valley	1960 6,454	8,478	14,932	14.8	63,688	3,034	1,343	31.2	525	27.0	7,207	21.3	204.5
		1959 6,572	8,187	14,759	9.1	63,160	3,075	1,412	32.0	606	29.1	8,183	20.8	220.4
	New York Central	1960 59,153	72,650	131,803	9.3	59,773	3,301	1,356	33.2	705	38.3	8,987	18.3	163.1
		1959 61,695	67,380	129,075	8.7	59,324	3,296	1,392	33.0	706	36.6	8,925	18.1	161.1
	New York, Chic. & St. L.	1960 9,399	14,949	24,348	13.9	59,753	3,294	1,399	32.0	1,162	60.1	12,878	18.4	161.9
		1959 9,179	15,286	24,465	12.8	59,801	3,321	1,458	31.7	1,185	58.9	13,264	18.2	160.4
	Pitts. & Lake Erie	1960 5,476	5,541	11,017	12.2	64,171	4,074	2,373	56.7	358	10.7	19,268	15.9	120.3
		1959 5,366	7,731	13,097	8.1	61,966	3,927	2,304	54.5	355	10.3	19,763	15.9	146.3
	Wabash	1960 9,720	11,217	20,937	9.1	81,478	3,342	1,365	28.5	930	51.2	7,464	24.5	120.9
		1959 9,727	7,923	17,650	8.3	70,913	2,954	1,196	28.3	1,086	61.1	8,119	24.1	152.8
Central Eastern Region	Baltimore & Ohio	1960 57,860	41,722	99,582	13.2	57,180	3,598	1,718	39.8	753	32.0	12,801	16.1	112.7
		1959 60,889	36,447	97,336	18.5	56,659	3,570	1,721	38.4	738	32.0	12,549	16.1	102.6
	Bessemer & Lake Erie	1960 5,710	2,025	7,735	6.8	65,364	4,667	2,989	68.2	687	15.2	22,978	15.1	131.8
		1959 5,431	2,104	7,535	12.9	72,953	5,237	3,492	71.4	685	13.5	24,680	14.8	129.5
	Central RR Co. of New Jersey	1960 4,347	8,403	12,750	20.7	40,964	2,884	1,524	41.3	382	14.3	8,651	14.8	73.6
		1959 3,782	10,033	13,815	15.6	41,335	2,993	1,570	40.4	395	15.3	9,264	14.4	87.6
	Chicago & Eastern Ill.	1960 3,395	3,239	6,634	8.7	70,076	4,212	2,098	39.3	1,018	42.3	7,732	16.8	105.5
		1959 3,433	2,927	6,360	14.3	68,818	3,984	2,016	39.4	1,182	47.3	8,801	17.4	125.9
	Elgin, Joliet & Eastern	1960 7,375	8,553	15,928	4.2	23,638	2,894	1,587	47.6	200	7.0	15,864	8.4	68.9
		1959 7,645	8,708	16,353	4.4	21,070	3,020	1,635	45.4	221	7.9	17,870	7.2	73.5
	Pennsylvania System	1960 106,671	87,086	193,757	12.1	57,857	3,451	1,605	36.3	692	31.4	13,756	17.3	138.1
		1959 125,122	71,518	196,640	18.8	56,431	3,301	1,556	35.2	674	30.1	13,749	17.6	137.4
	Reading	1960 17,048	15,837	32,885	18.3	53,137	3,419	1,791	45.9	476	17.8	12,301	15.5	67.4
		1959 19,278	15,787	35,065	19.9	49,484	3,214	1,678	44.7	455	17.1	12,358	15.4	66.8
	Western Maryland	1960 6,975	2,997	9,972	7.0	56,839	3,997	2,273	50.6	1,027	31.9	12,168	14.4	131.2
		1959 6,150	3,456	9,606	6.4	57,760	3,962	2,254	50.3	1,142	35.4	13,133	14.7	134.9
Pocahontas Region	Chesapeake & Ohio	1960 63,826	26,884	90,710	4.9	77,383	4,159	2,282	48.8	964	35.3	17,229	18.7	66.9
		1959 58,783	28,059	86,842	7.2	78,046	4,225	2,334	48.8	992	36.7	17,148	18.5	65.1
	Norfolk & Western*	1960 49,385	8,184	57,569	2.5	92,448	5,334	2,930	54.5	1,221	40.7	26,164	17.7	155.6
		1959 51,704	8,679	60,383	3.3	87,916	5,171	2,797	52.4	1,070	36.9	24,246	17.4	109.8
	Rich., Fred. & Potomac	1960 89	951	1,040	2.4	104,361	4,610	1,846	28.5	2,277	132.7	21,586	22.7	92.3
		1959 106	986	1,092	2.8	100,305	4,505	1,772	26.9	2,022	121.4	19,847	22.3	88.3
Southern Region	Atlantic Coast Line	1960 18,768	16,763	35,531	4.3	51,832	3,079	1,435	36.8	961	45.1	6,176	16.9	208.3
		1959 20,281	17,494	37,775	4.3	51,134	3,028	1,410	36.8	890	41.8	5,972	17.0	204.7
	Central of Georgia	1960 3,447	5,417	8,864	3.5	54,727	3,259	1,636	38.9	1,117	44.6	5,868	16.8	203.9
		1959 3,432	5,909	9,341	3.3	54,300	3,126	1,566	38.0	1,080	42.9	5,703	17.4	200.0
	Florida East Coast	1960 569	5,492	6,061	.3	46,340	3,156	1,070	27.8	688	50.2	6,442	14.7	77.3
		1959 532	5,131	5,663	.7	41,288	2,429	823	26.4	615	44.0	6,070	17.1	90.1
	Gulf, Mobile & Ohio	1960 7,024	9,698	16,722	6.6	78,344	4,082	1,959	34.7	1,016	44.9	6,160	19.2	101.7
		1959 6,466	10,109	16,575	5.1	78,008	4,111	1,999	34.3	1,041	44.6	6,377	19.0	103.8
	Illinois Central	1960 27,358	24,223	51,581	3.0	62,488	3,403	1,580	34.5	1,011	47.7	7,679	18.5	146.9
		1959 26,997	22,269	49,266	4.3	62,366	3,376	1,555	34.0	1,038	49.8	7,946	18.6	97.6
	Louisville & Nashville	1960 34,456	20,501	54,957	11.4	58,117	3,247	1,617	40.5	936	38.7	8,793	18.0	203.2
		1959 35,157	16,627	51,784	7.4	55,731	3,203	1,623	39.1	862	35.1	8,006	17.4	193.9
	Seaboard Air Line	1960 15,498	14,813	30,311	3.4	60,537	3,504	1,634	37.6	1,068	48.7	7,767	17.6	189.9
		1959 16,930	13,040	29,970	3.0	60,948	3,337	1,540	36.4	1,018	47.7	7,389	18.6	180.8
	Southern	1960 21,086	31,014	52,100	3.7	57,479	3,440	1,384	28.8	737	40.6	6,194	16.8	151.4
		1959 19,866	27,791	47,657	4.8	59,769	3,392	1,588	32.5	903	43.1	6,952	17.6	152.5
Northwestern Region	Chicago & North Western	1960 22,536	26,680	49,216	7.7	50,868	2,971	1,327	35.1	724	34.5	3,927	17.2	147.2
		1959 21,543	24,799	46,342	4.9	52,771	2,805	1,223	32.7	694	37.4	3,834	18.9	174.3
	Chicago Great Western	1960 2,260	4,800	7,060	3.4	67,339	3,618	1,684	33.1	1,041	47.8	5,172	18.7	176.8
		1959 2,342	3,953	6,295	3.7	71,001	3,692	1,719	32.9	1,263	58.0	5,317	19.3	184.2
	Chic., Milw., St. P. & Pac.	1960 29,341	21,158	50,499	5.4	66,452	3,249	1,418	31.6	738	37.6	3,492	20.5	162.9
		1959 29,043	23,686	52,729	3.4	63,493	3,163	1,418	31.1	748	37.2	3,772	20.1	104.5
	Duluth, Missabe & Iron Range	1960 13,052	481	13,533	1.2	92,478	5,706	3,415	64.8	623	19.0	14,579	17.6	34.5
		1959 13,443	775	14,218	2.0	78,977	4,903	2,850	61.3	351	10.8	9,088	17.5	30.7
	Great Northern	1960 24,417	17,838	42,255	3.4	65,532	3,242	1,504	35.0	1,068	48.9	5,421	20.4	114.1
		1959 23,263	20,254	43,517	2.7	63,362	3,187	1,472	33.4	1,017	47.0	5,298	20.1	115.5
	Minn., St. P. & S. Ste. Marie	1960 7,084	6,261	13,345	6.1	51,532	2,508	1,155	31.2	990	48.2	3,093	20.7	129.8
		1959 7,077	6,283	13,360	7.4	49,515	2,450	1,126	31.2	1,039	49.9	3,215	20.3	134.2
	Northern Pacific	1960 19,321	15,451	34,772	3.3	65,871	3,008	1,314	30.7	992	51.3	5,196	21.9	112.5
		1959 18,688	15,377	34,065	2.2	64,199	2,969	1,310	30.2	974	49.5	5,175	21.6	114.6
	Spokane, Portland & Seattle	1960 1,425	4,485	5,908	3.5	43,827	3,083	1,487	32.7	1,187	50.1	7,337	14.2	134.3
		1959 1,330	4,182	5,512	2.6	43,350	2,898	1,373	31.8	1,217	53.0	6,989	15.0	98.9
Central Western Region	Atch., Top. & S. Fe (incl. G. C. & S. F. and P. & S. F.)	1960 51,308	34,312	85,620	4.7	81,563	3,208	1,251	29.1	1,368	77.4	8,937	25.5	160.4
		1959 49,830	34,752	84,582	4.3	80,051	3,260	1,252	28.4	1,300	75.2	8,482	24.6	151.6
	Chic., Burl. & Quincy	1960 25,600	21,963	47,563	3.6	66,992	3,023	1,333	30.7	917	46.1	5,054	22.3	162.4
		1959 21,876	22,650	44,526	3.3	63,382	2,914	1,299	30.2	998	49.4	5,240	21.8	169.1
	Chic., Rock I. & Pac.	1960 15,690	18,542	34,232	6.4	62,835	2,973	1,199	30.4	1,108	61.0	5,114	21.2	169.4
		1959 13,783	21,761	35,544	4.1	62,052	2,872	1,179	29.4	1,091	59.1	5,259	21.6	189.6
	Denver & R. G. Western	1960 8,454	6,146	14,600	5.6	71,825	3,343	1,669	34.0	1,109	43.3	7,649	21.5	126.8
		1959 8,131	5,685	13,816	5.8	71,338	3,408	1,677	33.9	1,117	45.0	7,367	21.0	121.2
	Southern Pacific	1960 31,483	39,806	71,289	1.8	75,836	3,336	1,420	30.2	1,384	71.3	12,234	23.0	110.6
		1959 34,436	45,959	80,395	2.4	70,311	3,286	1,383	29.7	1,275	66.9	12,343	21.6	121.5
	Union Pacific	1960 32,601	32,634	65,235	2.3	94,892	3,519	1,498	29.4	1,429	76.1	9,515	27.2	152.0
		1959 31,757	31,667	63,424	1.6	88,685	3,217	1,329	28.8	1,459	81.6	9,681	27.8	159.0
	Western Pacific	1960 2,741	2,339	5,080	3.9	76,225	2,654	1,177	30.1	2,111	104.2	8,961	28.9	196.0
		1959 2,710	3,203	5,913	2.9	75,382	2,692	1,197	29.6	1,736	85.5	8,821	28.1	226.2
Southwestern Region	Kansas City Southern	1960 2,202	5,672	7,874	4.2	100,945	4,969	2,351	36.5	1,225	51.9	10,852	20.3	210.6
		1959 2,436	5,269	7,705	5.6	102,090	4,899	2,295	35.0	1,217	52.5	10,544	20.9	199.9
	Louisiana & Arkansas	1960 1,808	3,530	5,338	6.5	79,104	3,930	1,903	38.9	907	36.5	6,501	20.2	178.3
		1959 2,014	2,978	4,992	7.5	75,569	3,691	1,737	37.3	933	39.7	6,242	20.5	199.3
	Mo.-Kans.-Texas Lines	1960 5,068	5,874	10,942	11.0	58,666	3,095	1,352	32.4	984	48.7	3,659	19.0	150.0
		1959 5,273	6,643	11,916	7.9	63,343	3,744	1,672	32.2	998	48.7	3,961	16.9	126.6
	Missouri Pacific	1960 23,766	22,169	45,935	7.1	71,649	3,440	1,567	33.2	1,348	63.7	6,558	20.9	187.5
		1959 22,677	26,105	48,782	8.0	69,741	3,413	1,523	32.2	1,227	60.1	6,115	20.5	172.6
	St. Louis-San Francisco	1960 12,002	10,256	22,258	1.8	58,826	2,779	1,311	32.0	1,157	53.0	5,642	21.2	188.6
		1959 12,066	9,754	21,820	1.6	59,600	2,933	1,397	32.8	1,217	54.6	5,832	20.4	194.1
	St. Louis Southw. Lines	1960 2,143	3,746	5,889	3.8	78,339	3,198	1,430	29.6	3,083	150.5	10,734	24.5	222.4
		1959 2,070	4,673	6,743	2.8	73,896	3,058	1,367	28.1	2,255	110.8	9,629	24.2	225.3
	Texas & New Orleans	1960 6,478	14,959	21,437	2.2	82,784	3,480	1,615	33.2	1,491	68.6	7,715	23.9	149.0
		1959 6,256	14,937	21,193	1.5	75,064	3,168	1,442	31.8	1,447	69.1	7,267	23.8	156.6
	Texas & Pacific	1960 3,092	5,300	8,392	4.5	79,936	3,447	1,324	29.3	1,421	78.5	6,709	23.3	249.3
		1959 2,943	5,782	8,725	3.2	74,423	3,217	1,283	29.1	1,370	73.5	6,747	23.3	274.5

* Includes operations of Virginian Ry. Co., merged into Norfolk & Western Ry. Co., December 1, 1959.

Compiled by the Bureau of Transport Economics and Statistics, Interstate Commerce Commission. Subject to revision.

New Products Report

Steel Sidewall Panels

A new Truscon insulated steel sidewall panel is available for use on office buildings, warehouses, and similar structural-frame buildings.

The panels are assembled in the field during erection and consist of a layer of insulating material sandwiched between two sheets of Trucson 24-in. Ferrobord or ribbed siding. Assembled panels are said to have a heat transmission coefficient of .18. The new panels are available in painted or galvanized steel, from 18 to 26 gage, in 2-ft widths and up to 40 ft long. They have interlocking side joints designed to blend with the fluted design of the panel.

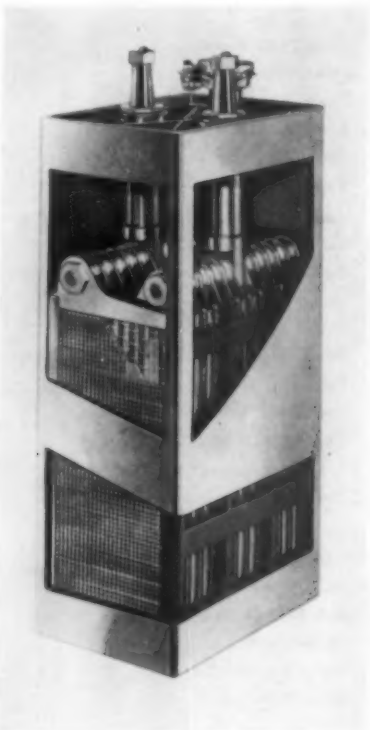
The manufacturer says the long lengths and absence of horizontal joints offer savings in erection time and a neat, trim surface. Painted panels are fabricated from prepainted stock for protection against rust, cracking, abrasion and weathering. Galvanized panels are designed to meet AISI specifications. *Republic Steel Corporation, Truscon Division, Dept. RA, Youngstown 1, Ohio.*

Filter Assemblies

The Series 3100 general purpose filter assemblies for the filtration of most fuels, lubrication oils, etc., have pore size ratings from 2 to 100 microns. The over-all temperature range of the five different element materials from which filters are made is minus 350 F to plus 350 F. Rated operating pressure is 150 psi with a burst pressure of 600 psi. *Bendix Filter Div., Bendix Corp., Dept. RA, 434 W. 12 Mile Road, Madison Heights, Mich.*

Highway-Rail Tower Truck

The Fairmont Hy-Rail Car, equipped with a Holan body and power equipment, will operate on either highway or rail. It travels on tracks on guide wheels, powered by the rear tires riding atop the rails. Seven men can ride in the crew compartment. The unit is equipped with a hydraulically operated aerial tower. A three-legged derrick has a height of 21 ft 7 in. and lifts up to 10,000 lb. *Holan Corp., Dept. RA, 4100 West 150th Street, Cleveland 35, Ohio.*



Nickel-Cadmium Battery

The Edison pocket-cadmium storage cell is an alkaline cell for signal, communications, and emergency power systems. The tubular positive plate contains nickel flake and nickel oxide in perforated steel tubes. The strip pocket cadmium negative plate contains a new active material. The housing is nickeled steel. The cell is suitable for deep cycling and low ambient temperatures. *Thomas A. Edison Industries, Dept. RA, 189 Main St., West Orange, N.J.*

Punched Card Reader

The Tab Card Reader reads and transmits IBM card information for input to all types of data processing equipment. It will read intermixed cards without adjustment at speeds from 7 to 20 columns per second. It has optional field reading and will stack cards in the exact insertion order. Control signals can be emitted when selected card column is reached or from selected punches in the card. *Systematics, Inc., Dept. RA, 10 E. 40th St., New York 16.*

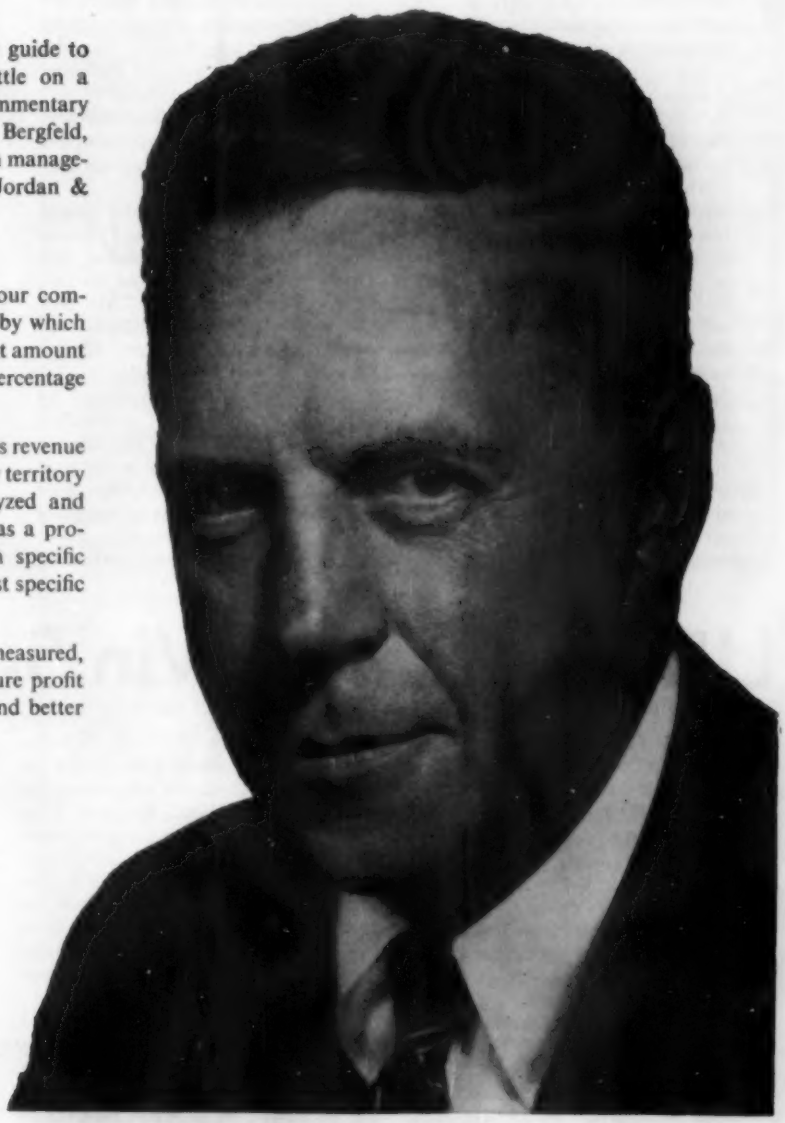
"What's so bad about basing the ad budget on last year's shipments?"

Management men, seeking a reliable guide to advertising appropriations, often settle on a percentage of sales. The following commentary on this practice was written by A. J. Bergfeld, President of the internationally known management consultant firm of Stevenson, Jordan & Harrison, Inc.

"Past practices of your own or of your competitors will produce no magic ratios by which you can either judge or budget the right amount of advertising automatically as a percentage of past sales.

"Plans for increasing sales volume, sales revenue and resulting profits by product and by territory or by divisions, can better be analyzed and approved by considering advertising as a programmed cost to be associated with specific profit plans and to be measured against specific results.

"Programming advertising costs as a measured, reasoned and integrated part of a future profit plan usually results in a better plan and better actual future profits."



AIA

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An organization of over 4000 members engaged in the advertising and marketing of industrial products, with local chapters in ALBANY, BALTIMORE, BOSTON, BUFFALO, CHICAGO, CLEVELAND, COLUMBUS, DALLAS, DENVER, DETROIT, HAMILTON, ONT., HARTFORD, HOUSTON, INDIANAPOLIS, LOS ANGELES, MILWAUKEE, MINNEAPOLIS, MONTREAL, QUE., NEWARK, NEW YORK, PHILADELPHIA, PHOENIX, PITTSBURGH, PORTLAND, ROCHESTER, ST. LOUIS, SAN FRANCISCO, TORONTO, ONT., TULSA, YOUNGSTOWN.

'Dark Horse' Diesel?

Sometime this fall a small six-wheel diesel switcher will roll out of Germany's MaK (Maschinenbau Kiel) plant and begin performance tests. To the casual observer, it will be just another standard V-60 diesel-hydraulic of the type widely used in Germany.

This unit, however, will embody a major change—a power package that could fail completely or, if it succeeds, could modify present motive power concepts.

The 650-hp German unit will be equipped with the first operational Suri transmission, a development announced only a few months ago by India's Railway Board.

The initial announcement included few details: it was said that the new transmission was capable of optimum efficiency of 95%; that it was not electrical, nor really hydraulic either; and that MaK had been granted a license for its manufacture together with an initial contract for construction of seven locomotives.

M. M. Suri, the Indian engineer who developed the new transmission, was in the United States last week. He told *Railway Age* that the device on which he now seeks a U.S. patent is basically a mechanical transmission. This confirms earlier speculation based primarily on the claims for efficiency made in the initial announcement by the Railway Board.

According to Mr. Suri, previous attempts at straight mechanical transmissions failed primarily in the starting range. To overcome the problem of starting torque the Suri unit employs a fluid coupling in the first stage. Beyond that, the fluid circuit cuts out and the drive becomes purely mechanical.

One unusual feature of the new transmission is that it employs only a single mechanical stage—no gear changes.

"That is where I had the biggest trouble," Mr. Suri reports. "Not so much with the transmission, but with the engine. I worked on that for two and a half years." Mr. Suri is deputy director (diesels) of India's Railway Research, Design and Standards Organization.

The biggest question raised by the use of a single mechanical stage, of course, is the relationship of horsepower to speed in the conventional diesel engine. A key part of the Suri design is a modified diesel engine delivering relatively constant horsepower over a useful speed range. The design is understood to have been developed in conjunction with Maybach (German) interests, and to be a modification of the standard Maybach engine.

Mr. Suri emphasizes that the first locomotives will use standard tested components as much as possible. The units will operate at low speed (40 mph maximum), relatively low horsepower, and will use standard external and running-gear design.

The Indian engineer also points out that his transmission development is experimental, and while he is confident that the basic principles are applicable to high-horsepower locomotives, tests with the smaller units will determine future development.

The new transmission, Mr. Suri contends, holds promise in a country such as India which must import most of its diesel fuel. This, plus the parallel need to conserve foreign-exchange reserves, is why the inherent efficiency of a mechanical transmission is worth developing.

LIRR Trainmen Win 5-Day Week

The Long Island and the Brotherhood of Railroad Trainmen settled their differences last week, ending the strike which had kept the railroad shut down for 25 days.

The new agreement, worked out in an 11-hour meeting in the office of New York Governor Nelson Rockefeller, gives LIRR passenger trainmen the five-day week they sought and was labeled a "victory" by BRT General Chairman Harold J. Pryor.

Cost of the settlement to the LIRR is estimated at $162,000 annually. President T. M. Goodfellow said, however, that this may only be the "down payment" on the ultimate cost if other operating brotherhoods demand similar concessions. Mr. Goodfellow said the road will have to seek increased fares beyond those already anticipated as a result of recent national wage settlements. The total increase will now run to $25 or $26 a year for the average commuter, he said.

The big issue in the strike was BRT's demand for seven days' pay for five days' work. The union gave up the demand for freight-service employees, but on a commuter road like the Long Island this was not a major concession. The union also conceded certain adjustments in rules, primarily the Assignment Rule, but it won extension of the present 95-cent air-hose arbitrary to all yard service men and a new arbitrary for switch tenders who had sought payment at the brakeman rate.

As this issue went to press, LIRR announced it was hopeful of resuming normal service at 12:01 a.m. Friday, Aug. 5. This was far from settled. Both the BLE and the BLF&E locals were threatening to invoke the rule which allows them up to 15 days to answer recall from furlough. No legal strike could be called without first exhausting the procedures outlined in the Railway Labor Act. Nor was it certain the BRT case was entirely settled. There were reports that the brotherhood would seek support from other unions and institute a "damage suit" against the LIRR to challenge the legality of the industry's strike-insurance plan.

During the 25-day tie-up, the LIRR collected around $50,000 a day in strike insurance.

In announcing the strike settlement, Governor Rockefeller noted that the shut-down of the nation's busiest commuter railroad had "caused economic hardships on many people and the public has suffered serious inconvenience."

New Haven to Present 'Program for the Future'

The ICC's inquiry into operations of the New Haven is scheduled to come to a close with a wind-up session Aug. 29. At that time the road plans to present its "program for the future" in response to a Commission request that it explain how it proposes to improve its operations should requested aid be forthcoming.

MARKET OUTLOOK *at a glance*

Carloadings Drop 0.9% Below Previous Week's

Loadings of revenue freight in the week ended July 30 totaled 614,236 cars, the Association of American Railroads announced on Aug. 4. This was a decrease of 5,548 cars, or 0.9%, compared with the previous week; an increase of 69,374 cars, or 12.7%, compared with the corresponding week last year; and a decrease of 8,442 cars, or 1.4%, compared with the equivalent 1958 week.

Loadings of revenue freight for the week ended July 23 totaled 619,784 cars; the summary, compiled by the Car Service Division, AAR, follows:

REVENUE FREIGHT CARLOADINGS
For the week ended Saturday, July 23

District	1960	1959	1958
Eastern	88,604	80,734	89,574
Allegheny	102,306	80,216	99,677
Pocahontas	52,222	47,540	51,877
Southern	107,491	107,413	105,957
Northwestern	100,530	64,471	98,799
Central Western	118,021	108,658	113,004
Southwestern	50,610	47,363	49,177
Total Western Districts	269,161	220,492	260,980
Total All Roads	619,784	536,395	608,065
Commodities:			
Grain and grain products	75,661	53,768	72,269
Livestock	3,502	3,501	3,832
Coal	101,822	99,114	107,853
Coke	6,061	3,360	5,466
Forest Products	39,075	40,662	37,139
Ore	66,989	13,332	56,402
Merchandise l.c.l.	33,770	38,995	43,194
Miscellaneous	292,904	283,963	282,710
July 23	619,784	536,395	608,065
July 16	607,081	585,073	582,244
July 9	456,330	552,313	491,566
July 2	549,416	574,102	460,345
June 25	641,628	697,797	627,185
Cumulative total, 29 weeks	17,372,946	17,942,169	15,974,052

PIGGYBACK CARLOADINGS.—U. S. piggyback loadings for the week ended July 23 totaled 10,222 cars, compared with 7,361 for the corresponding 1959 week. Loadings for 1960 up to July 23 totaled 304,746 cars, compared with 225,953 for the corresponding period of 1959.

IN CANADA.—Carloadings for the seven-day period ended July 14 totaled 77,463 cars, compared with 67,706 for the previous seven-day period, according to the Dominion Bureau of Statistics.

	Revenue Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada		
July 14, 1960	77,463	23,409
July 14, 1959	81,879	25,645
Cumulative Totals		
July 14, 1960	1,941,139	784,833
July 14, 1959	1,977,455	770,223

New Equipment

PIGGYBACK

► *General Transport Equipment Co.*—Has acquired from Highway Trailer Co. 50 40-ft trailers designed for piggyback service. General Transport, a leasing company, plans eventually to increase its piggyback fleet to 1,000 trailers "in view of the existing demand for piggyback and over-the-road equipment by freight forwarders, railroads, and motor carriers." The company also intends to acquire containers for leasing.

New Facilities

► *India.*—Has negotiated a $70,000,000 World Bank loan for improvement and expansion of its railways. Proceeds will be used for purchase of locomotives, passenger cars, freight cars, and for electrification and track projects. The loan will pay for most of the railway system's foreign exchange needs in the final year of India's five-year plan ending March 31, 1961.

► *Ogden Union Railway & Depot.*—North annex to passenger station will be remodeled to provide additional facilities for U. S. postal transfer service. Two new buildings will be constructed for use by carmen and switchmen now using station annex. Projects will cost approximately $69,000, will be completed by Sept. 1.

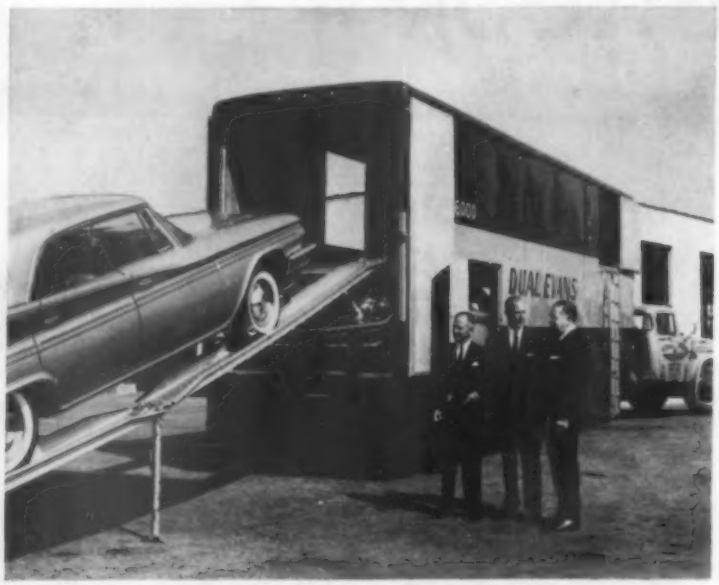
► *Southern Pacific.*—Is constructing direct interchange connection with National Railways of Mexico from SP's El Paso yard to the joint Chihuahua Pacific-El Paso Southern bridge. Also, car handling capacity of the El Paso yard will be tripled by laying of additional 2,900 feet of yard tracks.

► *Western Pacific.*—Will build a new diesel shop at Stockton, Calif., at a cost of approximately $1,600,000. Shop building, 135 ft by 327 ft, will accommodate 14 units, with provision for increasing capacity to 22 units if required. New facilities will include a complete machine shop, stores building, train washer, sanding plant and high-speed fueling station. Construction is expected to begin late this year. WP originally planned to build the shop at Oroville, Calif. (RA, Aug. 10, 1959, p. 45), but switched to Stockton after reexamination of the proposal in light of present operating requirements.

Maintenance Expenditures

► *Down 3.0% in May.*—Expenditures by Class I roads for maintenance of equipment, way and structures in May were down about $7.9 million, compared to May 1959, according to report of AAR Bureau of Railway Economics summarized below:

	May 1960	May 1959	% Change
Maintenance of Way and Structures	$107,242,102	$112,319,564	—4.5
Maintenance of Equipment	151,645,439	154,510,688	—1.9
Totals	258,887,541	266,830,252	—3.0



Dual-Evans Introduces Convertible Auto Hauler

New dual-purpose trailer, introduced in Detroit last week, is designed to increase the "loaded-mile" performance for railroads and truck operators. Available on a lease basis, the 37-ft 6-in unit can be used to handle autos in one direction, general cargo in the other. The trailer can be used in TOFC service or over the highway. Produced by Dual-Evans Corp., jointly-owned subsidiary of Evans Products Co. and Dual Motors Corp., the new unit can be converted from auto hauler to dry freight vehicle in less than 10 minutes. No special tools are required. DF devices protect cargo from damage when package freight is being handled. Previewing the new vehicle above are Ben Colman (l.) president of Dual-Evans, Edward S. Evans, Jr., president of Evans Products and a D-E director, and Eugene A. Casaroll, vice president and treasurer of Dual-Evans. Five railroad presidents have indicated interest in the trailer.

B&O Swiss Stockholders Wooed

The Chesapeake & Ohio and the New York Central continued to move along separate but closely parallel paths last week toward a single goal: stock control of the Baltimore & Ohio. Their latest moves ranged from Washington, D. C., to Zurich, Switzerland.

In Washington, NYC filed a formal application with the ICC asking authority to acquire control of the B&O through stock ownership. C&O earlier asked the Commission for the same authority (RA, June 20, p. 9).

Meanwhile, C&O President Walter Tuohy was in Zurich making overtures to Swiss interests said to control some 25% of B&O stock. Mr. Tuohy was accompanied by two other members of the C&O official family: J. E. Kusik, vice president, and J. F. Kerslake, treasurer. NYC Vice President —Finance W. R. Grant was an earlier visitor to Zurich, on a similar mission.

NYC proposes to exchange one and one-half shares of Central stock and $9 in cash for each share of B&O common, up to 1,550,000 shares. C&O has offered to exchange C&O common stock on a share-for-share basis for B&O preferred, and one share of C&O common for each one and three-quarters shares of B&O common.

The roads made their separate offers after preliminary talks about a three-way merger broke down.

B&O directors initially recommended that their stockholders accept the C&O offer, which was made first. But following the NYC offer, the B&O board advised the stockholders to make up their own minds on the relative merits of the two proposals. Meanwhile, the B&O has moved to reopen three-way talks—a move which NYC favors but C&O opposes.

In its application to the ICC last week, NYC noted that it is presently the beneficial owner of 24,600 shares of common stock of the B&O. If Central succeeded in acquiring the 1,550,000 additional shares, it would own 50.03% of the total voting shares of the B&O outstanding as of last March 31, the application said.

NYC also asked the ICC for authority, "in the event that less than the maximum of 1,550,000 shares of common stock of the B&O are acquired pursuant to the exchange offer, to purchase in the open market any shares of common stock needed" to acquire 50% of B&O voting stock.

In support of the proposed NYC-B&O affiliation, the Central made the following points, among others:

"The eastern railroads during the last decade have been aggressive in their rate-making policies and in their efforts through solicitation and improved service to recapture traffic volume and otherwise improve their revenue. Nevertheless, their traffic and net railway operating income have declined. The Central and the B&O have experienced these trends. It is readily apparent that steps must be taken to eliminate duplicate facilities, concentrate the traffic over fewer and less costly main lines, reduce overhead burdens, obtain better utilization of equipment and, wherever possible, improve service.

"The eastern railroads generally, and the Central and the B&O in particular, have in the last decade expended huge sums to modernize their properties in many ways. . . Experience on these railroads indicates that if the competition with which they are confronted is to be met successfully in the future, many of the programs now being progressed must be extended beyond what is possible on a strictly intra-railroad basis.

"The eastern railroads, and the Central and the B&O in particular, not only face increased competition from regulated carriers by highway, water and air, but also an ever-increasing volume of private competition which is growing alarmingly as a result of improved and expanded publicly maintained, highway, waterway and airway systems.

"The Central and the B&O are also faced with increased competition from an expanded Pennsylvania Railroad System. . .

"If the Central and the B&O are to remain effective competitive agencies in the national transportation system, they should be affiliated as promptly as possible. . . [NYC believes] that it is highly desirable in the public interest that there be an affiliation and ultimate merger of the properties of the Chesapeake & Ohio Railway Company, the B&O and the Central, and it has actively sought and will continue to seek to bring this about. . ."

Western Mergers Move Closer

► The Story at a Glance: Five merger-minded railroads breezed through ICC examiners' hearings last week, with little or no opposition placed on the record.

● Presentation of testimony on C&NW's acquisition of M&StL took less than a day and developed no opposition whatsoever.

● Hearings later in the week on the Soo Line-Wisconsin Central-DSS&A merger took only a little longer and developed only one small pocket of opposition.

Purchase of the Minneapolis & St. Louis by the Chicago & North Western was unopposed at a one-day hearing before an ICC examiner in Chicago last week.

L. S. Provo, C&NW vice president and comptroller, appearing before Paul C. Albus, Division four examiner, called the merger "a necessary step for both roads and important for the effectiveness of the railroad industry as a whole."

Forestalling labor opposition to the merger is an agreement outlining handling of employees in the merged company reached by the C&NW and a joint committee of all standard railway labor organizations representing M&StL employees.

Stockholders of both roads have approved the consolidation and final action is now up to the ICC. Favorable action will result in creation of the second longest rail system in the United States.

North Western is seeking to purchase the assets and good will of the 1,500-mile M&StL for $20,929,920. The transaction involves payment of $3,488,320 in cash and the assumption of liability by the North Western of $17,441,600 first mortgage bonds secured by M&StL property. The agreement also obligates the North Western to provide a sinking fund for retirement of the 25-year, 6% bond issue.

Several shipper representatives spoke out in favor of the consolidation.

"It is to our advantage to have a strong railroad system," said W. G. McArthur, vice president-transportation, Pillsbury Co. He added: "We feel the acquisition [of M&StL by C&NW] will strengthen the North Western and will be in the public good."

F. L. O'Neill, general traffic manager, Minnesota Mining and Manufacturing Co., told Examiner Albus: "I consider this a move in the right direction. It will help to make the railroads better able to compete."

Mr. Provo termed the transaction "self-liquidating." He said the M&StL contribution to C&NW net will equal the purchase price in five years.

Annual savings of $3,000,000 are expected to result from the consolidation. Economies are estimated to run in excess of 75% of M&StL accounting and executive salaries and expenses; 75% of traffic expenses; 50% of superintendence expense; 20% of station employee, dispatching, yardmaster and yard clerk expense. Additional savings will accrue from elimination of taxes and fringe benefits applicable to the above reductions. The estimated savings do not include any figures for possible branch line eliminations, train-mile reductions, joint facility eliminations or eliminations of duplicating carshops or enginehouses.

Faced with mounting costs and dwindling traffic, the M&StL has attempted to cut costs by modernizing operations, improving service and reducing employment. Max Swiren, chairman of the M&StL executive committee, said the many internal improvements had only helped the road meet the results of inflation. He explained that the areas of improvement had been exhausted and his management was seeking unification with a stronger road to prevent disruption of service. Mr. Swiren called for speedy action by the ICC to "expedite the transition for the benefit of shippers, employees and shareholders."

At Minneapolis, DSS&A President L. H. Murray outlined plans for merger of the three Canadian Pacific affiliates, Soo Line, Wisconsin Central and DSS&A, into a 4,800-mile system serving seven upper Midwest states. Consolidation, he said, will produce annual savings estimated at $1,260,000.

Opposition to the merger was voiced by an association of DSS&A employees who appeared as citizens of Marquette, Mich., where DSS&A locomotive and freight car repairs are performed. Under the plan of merger these facilities would be consolidated with present Soo Line mechanical facilities at Minneapolis. The move would mean a loss of 84 contract positions at Marquette.

A Soo Line spokesman assured Examiner Hyman J. Blond that the unified company would retain at Marquette all work that could be economically performed there.

Presidents of the other two roads—Soo Line's G. Allan MacNamara and Wisconsin Central's Edgar F. Zelle—also urged approval of the unification plan. Mr. MacNamara told the examiner that "it is essential to remember that other railroad mergers have taken place or will inevitably take place in the foreseeable future. Unless these three companies proceed immediately to consummate this merger, their position in the railroad industry will deteriorate as other railroad mergers occur."

4 RRs Oppose ACL-SAL Union

Four southern roads served notice last week that, based on present information, they expect to oppose merger of the Atlantic Coast Line and the Seaboard Air Line.

The four roads—Southern, Central of Georgia, Gulf, Mobile and Ohio, and Florida East Coast—filed a joint letter with the ICC, asking the Commission to withhold action on the ACL-SAL merger application until information is available "to determine the full extent to which the four roads and the public will be adversely affected by the proposed merger."

The 17,000-mile "rail empire" created by this merger "would dominate the territory south of the Ohio and east of the Mississippi," the four roads said. They described the merger as proposing greater domination of a single territory than ever before approved by the ICC.

Until ACL and SAL disclose exactly what they propose with respect to abandonments, routings, rates, service and schedule connections, it will be impossible for any interested party to determine the full extent of the proposed merger's impact, the roads contended.

The letter to the ICC intimates that each of the four roads will not only intervene in opposition, but will seek to have included in the proposal such "other mergers, divestitures of control, transfers of lines of road, trackage rights or other arrangements as may be necessary to mitigate the adverse affects of the proposal."

Dividends Declared

ATLANTIC COAST LINE.—50¢, quarterly, payable Sept. 12 to holders of record Aug. 4.

CLEVELAND & PITTSBURGH.—7% regular guaranteed, 87½¢, quarterly; 4% special guaranteed, 50¢, quarterly, both payable Sept. 1 to holders of record Aug. 10.

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MICROWAVE PLANNING

(*Continued from page 20*)

should be recorded at each point.

The aerial methods include running profiles by radar surveying from the air, and taking stereoscopic photographs of the area being surveyed. Both methods are accurate but expensive.

The field survey should not be limited to the attaining of information solely for plotting profiles and detailing path clearances. It should include the collection of all information necessary to evaluate the merits of each site, and to plan site development when the final choice has been made. To achieve this purpose, information should be obtained concerning the following: accessibility, power availability, soil conditions, site obstructions, availability and cost of land, existing structures, availability of suitable alternate locations, zoning regulations, airports, unusual weather conditions.

Finally, consideration should be given to the microwave equipment, including provisions for standby, antenna systems, towers, power, electrical protection, housing, fencing, terminal and distribution facilities such as open wire or cable.

Governmental Licensing

In selecting the particular frequencies to be applied for on FCC Form 400, it will be necessary to obtain information about other microwave systems operating near the proposed system. A joint group, formulated primarily for this purpose in 1954, is known as the Operational Fixed Microwave Council. The Communications Section, AAR, is a member of the council. The council has assembled information on all operational fixed microwave stations presently authorized. The routes of these microwave systems have been entered on maps. Thus, by consulting these maps and tabulated lists of authorizations, the council can determine what other microwave systems are in operation in the area of a proposed system.

In applying for a microwave system, it is important that a functional diagram be submitted in as complete detail as possible. It is not necessary, however, to duplicate such a diagram for each station in the system. Instead, the diagram may be attached to the application covering one of the terminal points and reference to this fact made on the applications for repeaters and for the other terminal point.

After construction permits have been received and construction completed FCC Form 400 must be filed with the Commission to obtain a license for each station.

People in the News

BANGOR & AROOSTOOK.—**J. Charles Hickson,** sales supervisor, Presque Isle, Me., named assistant regional vice president—sales, New England-New York area.

NEW HAVEN.—The title of **P. P. Pell,** director truck transportation and coordinated rail service, New Haven, Conn., changed to director, rail and truck services.

NEW YORK CENTRAL.—**C. T. Popma,** district engineer, Northern district, Detroit, Mich., transferred to the Eastern district, Syracuse.

William A. Newman, district freight sales manager, New York, appointed foreign freight sales manager.

J. E. DeFreest, master mechanic, Utica, N.Y., transferred to Springfield, Mass. **F. A. Danahy,** master mechanic, Indianapolis, Ind., succeeds Mr. DeFreest.

NORFOLK & WESTERN.—**R. Paul Yellen,** general agent, Baltimore, Md., appointed assistant freight traffic manager, Cincinnati, Ohio, succeeding **William R. McClelland** (RA, July 18, p. 45). **Thomas B. Collett,** commercial agent, Cincinnati, promoted to district freight agent there. **Paul E. Davidson,** general agent, Detroit, succeeds Mr. Yellen. **Walter E. Homersley,** commercial agent, Baltimore, named district freight agent there. **William O. Robinson,** district freight agent, Toledo, succeeds Mr. Davidson.

NORFOLK SOUTHERN.—**R. I. Bowles** appointed director of personnel, Norfolk, Va., with authority and supervision over personnel matters and procedures, with the exception of labor relations, which will continue as at present under supervision of **R. F. Haley,** whose title will be director of labor relations.

C. J. Collins, assistant general counsel, elected assistant secretary in addition to his present position, succeeding **Robert Lathan,** retired.

Harry L. Zober appointed general agent, Pittsburgh, Pa., succeeding **Forrest D. McMillan,** promoted to division freight agent, Raleigh, N.C. Mr. McMillan succeeds **W. C. Lewis,** who, for reasons of health, has been appointed special representative, Raleigh.

NORTHERN PACIFIC.—**W. E. Taylor,** commercial agent, Chicago, named assistant general freight agent-sales and service, St. Paul, Minn. **R. D. Formico,** head of the piggyback traffic office, St. Paul, appointed assistant general freight agent—rates there. **L. S. Kiser,** special representative for piggyback traffic, St. Paul, succeeds Mr. Formico, and in turn is replaced by **W. H. Egan,** city freight and passenger agent, Duluth, Minn.

PACIFIC FRUIT EXPRESS.—**William G. Cranmer** appointed auditor, to succeed **James O'Connor,** who retired July 31.

RAILWAY EXPRESS AGENCY.—**Harold E. Shipley,** director of advertising and promotion, New York, appointed to the new post of eastern regional marketing manager. **David E. Fackler,** advertising and sales promotion manager, Ozalid division, General Aniline & Film Corp., named director of the merged advertising and public relations divisions of REA. **Richard A. Strickland,** director, public relations, REA, continues in that post.

READING.—**Thomas H. Ramsey,** general freight traffic manager, Philadelphia, Pa., elected vice president—freight traffic, succeeding **J. Warren Lawson,** named to the newly created post of director of market research. **Herbert J. Lobb, Jr.,** freight traffic manager, succeeds Mr. Ramsey as general freight traffic manager.

ROCK ISLAND.—**Norman L. Schultz,** general freight agent, Chicago, appointed assistant freight traffic manager-rates there, to succeed **Arvid C. Mattson,** who retired July 31.

Leslie E. Sheldon, labor relations assistant, appointed superintendent of station service, succeeding **John O. Woodyard,** who retired Aug. 1.

SANTA FE.—**C. A. Holcombe,** assistant treasurer, Topeka, Kan., appointed secretary and treasurer there, to succeed **Charles A. Menninger,** who retired June 30. **C. R. Lake,** paymaster, replaces Mr. Holcombe.

P. L. Neiswanger, division freight and passenger agent, El Paso, Tex., named general agent, Cincinnati, replacing **Fred F. Faery,** who retired June 30. **Arthur A. Moser,** general freight agent, Chicago, named to replace **F. J. Wright,** general freight agent, promoted to assistant freight traffic manager, San Francisco. Mr. Moser's successor is **J. A. Grygiel** (RA, July 4, p. 34).

C. R. Bickel, general signal supervisor, Western Lines, Amarillo, Tex., appointed assistant signal engineer, Northern district, Western Lines, La Junta, Colo., succeeding **L. B. McCune,** transferred. **C. H. Green** succeeds Mr. Bickel.

C. E. Rollins appointed superintendent, Los Angeles Terminal division, Los Angeles, succeeding **B. O. Bernard,** transferred to the GC&SF (RA, July 25, p. 64).

SEABOARD.—**Stanley E. Shipp,** secretary to the president, appointed district freight agent, Norfolk, Va., succeeding **R. H. Rose,** promoted.

E. H. Whittaker appointed assistant general industrial agent, Jacksonville, Fla. **W. E. Deaton, III,** named industrial agent, Richmond, Va.

SOUTHERN.—**Joseph Marks,** general freight traffic manager, Washington, D.C., retired July 31.

Vance D. Elkins, freight agent, Birmingham, Ala., appointed assistant to vice president in charge of freight claims, stations and transfers, succeeding **J. Roland Formby,** retired.

SOUTHERN PACIFIC.—**Gerrit P. Nagtegaal** appointed engineer structural design, San Francisco, to replace **J. F. Hess, Jr.,** transferred.

A. I. Sellers, acting superintendent, Mechanical Department, Houston, Tex., appointed superintendent, Mechanical Department there, succeeding **F. E. Russell,** named assistant general superintendent, Mechanical Department-Engineering, San Francisco. **N. L. McCracken** appointed assistant general superintendent, Mechanical Department-Maintenance. **Lauren N. Griffith,** assistant mechanical engineer, San Francisco, retired July 31.

David F. Diemer, district freight agent, San Francisco, promoted to assistant general freight and passenger agent, Oakland, Calif., succeeding **Clifford H. Reeves,** who retired July 31. Mr. Diemer's successor is **Thomas E. Hewitt,** general agent, Salt Lake City, who in turn is replaced by **Morris E. Mitchell,** district freight and passenger agent, Bakersfield, Calif. **Ellwood A. Bancroft,** assistant district freight agent, San Francisco, replaces Mr. Mitchell.

Thomas H. Ramsey
Reading

Herbert J. Lobb, Jr.
Reading

L. C. Albert, first assistant manager of personnel, SP Lines in Texas and Louisiana, Houston, Tex., appointed manager of personnel there, succeeding **E. B. Kysh,** retired. **J. D. Davis,** assistant manager of personnel, replaces Mr. Albert.

Thomas L. Fuller named assistant engineer of bridges, San Francisco.

TRANSPORTATION CENTER, NORTHWESTERN UNIVERSITY.—**Dr. Leon N. Moses,** assistant director of research, appointed director of research, to succeed **Dr. Allen R. Ferguson,** who has resigned effective Sept. 1.

UNION PACIFIC.—**H. J. Bearss,** assistant general auditor, Omaha, Neb., appointed senior assistant general auditor, succeeding **E. M. Kerrigan,** (RA, July 11, p.44). **E. R. Miller,** auditor disbursements, named assistant general auditor. **A. O. Mercer,** auditor general and station accounts, succeeds Mr. Miller. **C. D. Mayer** replaces Mr. Mercer. **Dr. R. C. Pratt** named economist and assistant to general auditor.

WESTERN PACIFIC.—**Charles J. Fischer,** district sales manager, Los Angeles, promoted to acting regional sales manager, intermountain region, Salt Lake City, Utah, to replace **H. Ray Coulam,** on leave of absence. **Joseph F. Homer,** traffic representative, Los Angeles, replaces Mr. Fischer.

Spencer S. Gilman, assistant transportation engineer, research department, San Francisco, appointed assistant to the director of industrial development and real estate.

Supply Trade

Paul L. Ryan, former Schenectady newspaperman, has been appointed manager, News Bureau, **ALCO Products, Inc.,** Schenectady, succeeding **Roger C. Witherell,** who has joined the **General Electric Co.** news bureau in that city.

Robert Erlenbaugh has been appointed area supervisor of railroad sales for the Midwestern Zone, **Turco Products, Inc.**

OBITUARY

Nathan H. Schultz, 68, chief of the Chicago tariff bureau, **Santa Fe,** died July 30.

William J. Stebler, 57, assistant to the chairman of the board and director, **General American Transportation Corp.,** died July 31 in St. Francis Hospital, Evanston, Ill. Mr. Stebler was president of the corporation from 1953 until last April.

Leo J. Tracy, 70, who retired on June 30 as vice president and controller, **Union Pacific,** New York, died Aug. 2 at St. Vincent's Hospital, Harrison, N.Y.

You Ought To Know...

Latest refugee of note from Cuba is Maj. Raul Chibas, until recently a cabinet member and close associate of Premier Fidel Castro. Major Chibas, who fled to the U. S. last week, served briefly as minister of agriculture and later as commissioner of railroads following Dr. Castro's overthrow of the Batista government.

Concern about the "reserve capacity" of U. S. railroads to handle freight traffic in event of war was voiced again last week. Dr. Burton N. Behling, AAR economist, told a transport study seminar of the National Academy of Sciences that total capacity as of June 1, 1960, was an estimated 1,737,000 tons a year. This was only slightly above the 1,528,000 tons actually handled in 1956. An industry operating for so long at margins of financial stringency is not in position to provide any substantial reserve of capability to meet sudden emergencies, Dr. Behling said.

Fines totaling $17,750 were imposed by the ICC on 18 railroads for 71 violations of the Safety Appliance Acts in July. During the same period two railroads were fined $1,000 for five violations of the Hours of Service Act.

Merger of three non-operating unions —Order of Railroad Telegraphers, Brotherhood of Railroad Signalmen and American Train Dispatchers Association—may come under study. Delegates to the recent ORT convention authorized President G. E. Leighty to explore the possibility of consolidation of the three organizations.

Locomotive engineers will retire at age 70 under terms of a new agreement between Illinois Central and the BLE. IC has similar retirement agreements with the BLF&E and BRT.

A million-dollar expansion and development program is in the works for North American Car's Sag Junction Terminal, southwest of Chicago. Among the projects scheduled: construction of 10 630,000-gallon tanks to increase storage capacity to 15,000,000 gallons; construction of a new 600-ft concrete dock; and installation of pipelines and manifold systems to permit multiple loading or unloading of barges, tank cars and trucks.

An added $8,500,000 tax refund will be received by C&NW under a settlement agreed to "in principle" by the Internal Revenue Service (RA, Aug. 1, p. 36). Refund, covering the period 1944-1946, must be approved by a joint Congressional committee on taxation. If the principles agreed to are applied to other issues for years up to 1952 an additional $5,500,000 will be forthcoming.

The GOP 1960 platform advocates "a stepped-up program to assist in urban planning, designed to assure far-sighted and wide use of land and to coordinate mass transportation and other vital facilities in our metropolitan areas." An earlier report (RA, Aug. 1, p. 27) indicated that the GOP platform omitted specific reference to plans for assisting urban mass transportation.

Transit needs of Washington, D. C., will be studied by the newly-created National Capital Transportation Agency to determine whether the city should (1) build an all-new express rapid transit system or (2) weld existing railroads and transit lines into a coordinated, high-speed network.

To encourage "outstanding achievement in the field of industrial communication," the American Railway Magazine Editors Association is establishing an annual awards program for service features and editorial material appearing in railroad company publications. The first awards—named for John Green, late editor of the Reading magazine—will probably be presented at ARMEA's Chicago convention, Oct. 12-14.

Capital Airlines will be absorbed by United Air Lines under terms of a merger agreement which must be approved by stockholders of both companies and by the CAB. Capital shareholders would receive one share of UAL common and a warrant to buy one and a half shares of United at $40 per share for each seven shares of Capital held. Holders of Capital-secured promissory notes issued under a chattel mortgage to Vickers-Armstrong, Ltd., would be compensated with UAL preferred and common shares, plus warrants for purchase of additional common and the return of 15 of Capital's 56 turbo-prop Viscounts. Does the move herald a trend to airline consolidation? Most observers don't think so.

Wabash piggyback loadings during the first six months of 1960 jumped 70% over first-half loadings in 1959. Now participating in all five TOFC plans, Wabash has 17 piggyback ramps in principal on-line cities.

Drought-stricken areas of Louisiana will benefit under an ICC order authorizing railroads to reduce rates on livestock feed and hay to affected parishes.

Engineering plans have been completed for an earthquake-proof underwater rapid transit tube spanning the Bay between San Francisco and Oakland. Construction of the four-mile tube, plus nearly two miles of approaches, will cost $127,191,000 — the money to come from surplus auto tolls collected on the Bay Bridge. It will be a key link in the proposed 100-mile rail rapid transit system now being designed for the Bay region; construction won't begin until voters approve issuance of general obligation bonds to finance the remainder of the system.

NYC has sold 10 West Shore Division stations (idle since discontinuance of the line's passenger service last year) to a New York City real estate investor. This brings total station sales this year to 54. The road has derived a net of $31,000,000 from 1,271 land sales since 1957.

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New Edition 1960-61

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'Value' Rates Still Valid

Right prices are practically the blood-stream of a competitive business. Freight rates are in process of large-scale change. The future solvency of railroads plainly requires that the revised rates be skillfully shaped so they will:

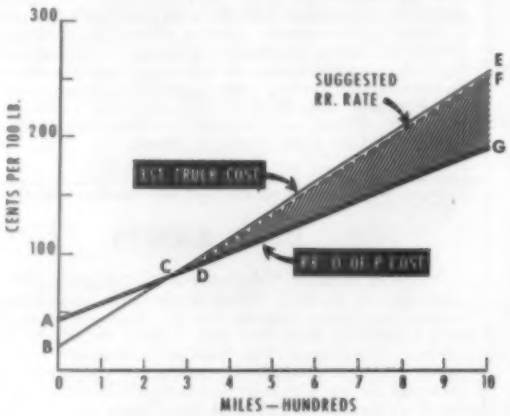
(1) Attract to railroads the traffic they can handle more economically than other agencies, while yielding the maximum overall profit obtainable (which is not the same thing as maximum profit obtainable per 100 lb);

(2) Protect, insofar as profit margins permit, the opportunities of faithful railroad patrons to continue serving and enlarging their markets.

On this page in our May 30 and July 25 issues we suggested some basic principles that need to be observed in pursuing the foregoing objectives. In particular, we called attention to the present effective "ceiling" on railroad rates (i.e., the cost of movement by competing transportation, including private hauling). We took note of the necessary floor (i.e., railroad out-of-pocket costs), and suggested that there is still room to give some consideration to "value of service" factors.

We invited discussion of these questions, and have been getting lots of it. One example is the short article by Alan White—a rate man of long experience—on page 15 herein. Mr. White suggests a simplified basis of maximum rates, to replace the entire complex class rate structure.

The railroads have done a pretty fair job, by and large, in pricing their service competitively on many commodities which move in large volume. But the only rates they usually have to offer for small-volume commodities (the new products coming onto the market daily) are those provided in the outmoded class rate structure—which is usually far too high to be competitive.



Relative rail and truck cost estimates for a 16,000 lb load (RR costs would be less on heavier loads).

The approach Mr. White and other imaginative rate men are pursuing to develop a substitute for the class rates should, one day, bring an acceptable solution—and tomorrow would not be any too soon.

Getting down to specific details, we have some reservations about what Mr. White proposes—for instance, that his substitute for class rates should be a structure based on so-called fully distributed costs. These fully distributed costs have the fatal quality of rising when traffic volume falls—hence may price railroads out of business. Nor do we believe, as Mr. White does, that "value of service" should be ignored.

The difference between our approach to this problem and Mr. White's may be illustrated by the accompanying chart. (The chart does not reflect Mr. White's proposal exactly, because it shows rail and truck costs in cents per 100 lb instead of per carload. And the case portrayed is not typical, in that the shipment weight is only 16,000 lb—less than half a carload).

Truck costs are invariably lower than rail for the shorter distances, because of lower terminal expense, and are higher for the longer distances because railroad line-haul costs are much lower.

Mr. White's approach would put railroad rates a fraction above AG, the railroad cost line on this chart (since his base is fully distributed costs and the AG line shows out-of-pocket costs). Our preference would be for railroad rates to move along from A to D to F—that is, be at railroad costs till the point where truck costs exceed railroad costs. Thereafter the railroad progression should follow along just under the truck cost line. (Of course, if keeping railroad rates near truck costs for the longer distances would make it difficult for long-haul shippers to compete successfully in distant markets, railroad rates could be "tapered off" at the longer distances.)

The point is that the shaded segment on this chart represents an area where "value of service" considerations could and should be given some weight in fixing rates. Anybody have any different, and better, suggestions?

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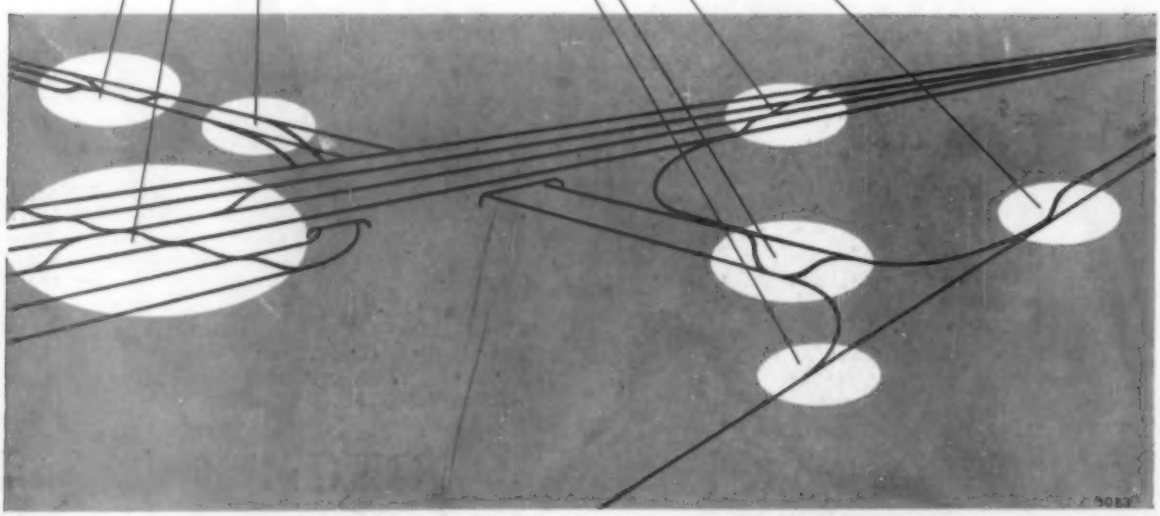
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